

\$ * * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 14:20:55 ON 03 FEB 2005

=> fil .bec

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS,
ESBIOBASE, BIOTECHNO, WPIDS' ENTERED AT 14:21:10 ON 03 FEB 2005
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11 FILES IN THE FILE LIST

=> s gst or glutathione s transferase#

FILE 'MEDLINE'

8489 GST

63803 GLUTATHIONE

4782567 S

51467 TRANSFERASE#

13349 GLUTATHIONE S TRANSFERASE#

(GLUTATHIONE(W)S(W)TRANSFERASE#)

L1 16158 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'SCISEARCH'

8465 GST

59101 GLUTATHIONE

1551884 S

41451 TRANSFERASE#

15904 GLUTATHIONE S TRANSFERASE#

(GLUTATHIONE(W)S(W)TRANSFERASE#)

L2 18649 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'LIFESCI'

3493 GST

15308 "GLUTATHIONE"

333053 "S"

13412 TRANSFERASE#

5563 GLUTATHIONE S TRANSFERASE#

("GLUTATHIONE"(W)"S"(W)TRANSFERASE#)

L3 6722 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'BIOTECHDS'

632 GST

2232 GLUTATHIONE

47553 S

3304 TRANSFERASE#

638 GLUTATHIONE S TRANSFERASE#

(GLUTATHIONE(W)S(W)TRANSFERASE#)

L4 932 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'BIOSIS'

10353 GST

70575 GLUTATHIONE

1277305 S

73331 TRANSFERASE#

18127 GLUTATHIONE S TRANSFERASE#

(GLUTATHIONE(W)S(W)TRANSFERASE#)

L5 21710 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'EMBASE'

7814 GST

55055 "GLUTATHIONE"

1214035 "S"
37824 TRANSFERASE#
12316 GLUTATHIONE S TRANSFERASE#
("GLUTATHIONE" (W) "S" (W) TRANSFERASE#)
L6 14834 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'HCAPLUS'
10880 GST
79532 GLUTATHIONE
2640352 S
49050 TRANSFERASE#
18752 GLUTATHIONE S TRANSFERASE#
(GLUTATHIONE (W) S (W) TRANSFERASE#)
L7 22102 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'NTIS'
61 GST
488 GLUTATHIONE
428304 S
1258 TRANSFERASE#
58 GLUTATHIONE S TRANSFERASE#
(GLUTATHIONE (W) S (W) TRANSFERASE#)
L8 101 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'ESBIOBASE'
5930 GST
24718 GLUTATHIONE
402784 S
31938 TRANSFERASE#
8415 GLUTATHIONE S TRANSFERASE#
(GLUTATHIONE (W) S (W) TRANSFERASE#)
L9 10365 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'BIOTECHNO'
4283 GST
16276 GLUTATHIONE
236253 S
16723 TRANSFERASE#
6443 GLUTATHIONE S TRANSFERASE#
(GLUTATHIONE (W) S (W) TRANSFERASE#)
L10 7999 GST OR GLUTATHIONE S TRANSFERASE#

FILE 'WPIDS'
587 GST
3155 GLUTATHIONE
3914270 S
5086 TRANSFERASE#
706 GLUTATHIONE S TRANSFERASE#
(GLUTATHIONE (W) S (W) TRANSFERASE#)
L11 989 GST OR GLUTATHIONE S TRANSFERASE#

TOTAL FOR ALL FILES
L12 120561 GST OR GLUTATHIONE S TRANSFERASE#

=> s l12 and (engineer? or shuffl?)

FILE 'MEDLINE'
57012 ENGINEER?
1384 SHUFFL?
L13 127 L1 AND (ENGINEER? OR SHUFFL?)

FILE 'SCISEARCH'
120882 ENGINEER?
2574 SHUFFL?
L14 135 L2 AND (ENGINEER? OR SHUFFL?)

```

FILE 'LIFESCI'
    19447 ENGINEER?
    767 SHUFFL?
L15      68 L3 AND (ENGINEER? OR SHUFFL?)

FILE 'BIOTECHDS'
    25090 ENGINEER?
    438 SHUFFL?
L16      97 L4 AND (ENGINEER? OR SHUFFL?)

FILE 'BIOSIS'
    158503 ENGINEER?
    1480 SHUFFL?
L17      394 L5 AND (ENGINEER? OR SHUFFL?)

FILE 'EMBASE'
    80450 ENGINEER?
    1183 SHUFFL?
L18      138 L6 AND (ENGINEER? OR SHUFFL?)

FILE 'HCAPLUS'
    142484 ENGINEER?
    2377 SHUFFL?
L19      324 L7 AND (ENGINEER? OR SHUFFL?)

FILE 'NTIS'
    181871 ENGINEER?
    269 SHUFFL?
L20      5 L8 AND (ENGINEER? OR SHUFFL?)

FILE 'ESBIOBASE'
    46992 ENGINEER?
    869 SHUFFL?
L21      625 L9 AND (ENGINEER? OR SHUFFL?)

FILE 'BIOTECHNO'
    62582 ENGINEER?
    812 SHUFFL?
L22      121 L10 AND (ENGINEER? OR SHUFFL?)

FILE 'WPIDS'
    156575 ENGINEER?
    1185 SHUFFL?
L23      41 L11 AND (ENGINEER? OR SHUFFL?)

TOTAL FOR ALL FILES
L24      2075 L12 AND (ENGINEER? OR SHUFFL?)

=> s l24 not 2000-2005/py
FILE 'MEDLINE'
    2727691 2000-2005/PY
L25      59 L13 NOT 2000-2005/PY

FILE 'SCISEARCH'
    5097493 2000-2005/PY
L26      68 L14 NOT 2000-2005/PY

FILE 'LIFESCI'
    512467 2000-2005/PY
L27      41 L15 NOT 2000-2005/PY

FILE 'BIOTECHDS'
    105642 2000-2005/PY

```

L28 19 L16 NOT 2000-2005/PY
 FILE 'BIOSIS'
 2625073 2000-2005/PY
 L29 245 L17 NOT 2000-2005/PY
 FILE 'EMBASE'
 2367945 2000-2005/PY
 L30 94 L18 NOT 2000-2005/PY
 FILE 'HCAPLUS'
 5123281 2000-2005/PY
 L31 101 L19 NOT 2000-2005/PY
 FILE 'NTIS'
 80220 2000-2005/PY
 L32 4 L20 NOT 2000-2005/PY
 FILE 'ESBIOBASE'
 1468247 2000-2005/PY
 L33 408 L21 NOT 2000-2005/PY
 FILE 'BIOTECHNO'
 491187 2000-2005/PY
 L34 92 L22 NOT 2000-2005/PY
 FILE 'WPIDS'
 4509723 2000-2005/PY
 L35 4 L23 NOT 2000-2005/PY
 TOTAL FOR ALL FILES
 L36 1135 L24 NOT 2000-2005/PY
 => s l36 and herbicide#
 FILE 'MEDLINE'
 9782 HERBICIDE#
 L37 0 L25 AND HERBICIDE#
 FILE 'SCISEARCH'
 23835 HERBICIDE#
 L38 0 L26 AND HERBICIDE#
 FILE 'LIFESCI'
 6075 HERBICIDE#
 L39 0 L27 AND HERBICIDE#
 FILE 'BIOTECHDS'
 5341 HERBICIDE#
 L40 1 L28 AND HERBICIDE#
 FILE 'BIOSIS'
 48036 HERBICIDE#
 L41 2 L29 AND HERBICIDE#
 FILE 'EMBASE'
 9336 HERBICIDE#
 L42 1 L30 AND HERBICIDE#
 FILE 'HCAPLUS'
 80562 HERBICIDE#
 L43 0 L31 AND HERBICIDE#
 FILE 'NTIS'
 3734 HERBICIDE#

L44 0 L32 AND HERBICIDE#

FILE 'ESBIOBASE'

7623 HERBICIDE#

L45 2 L33 AND HERBICIDE#

FILE 'BIOTECHNO'

3463 HERBICIDE#

L46 1 L34 AND HERBICIDE#

FILE 'WPIDS'

30403 HERBICIDE#

L47 0 L35 AND HERBICIDE#

TOTAL FOR ALL FILES

L48 7 L36 AND HERBICIDE#

=> dup rem l48

PROCESSING COMPLETED FOR L48

L49 6 DUP REM L48 (1 DUPLICATE REMOVED)

=> d tot

L49 ANSWER 1 OF 6 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN

AN 1999198043 ESBIOBASE

TI Characterization of recombinant corn **glutathione S-
transferase** isoforms I, II, III, and IV

AU Sommer A.; Boger P.

CS A. Sommer, Lehrstuhl für Physiologie, Biochemie der Pflanzen, Universität
Konstanz, D-78457 Konstanz, Germany.

SO Pesticide Biochemistry and Physiology, (1999), 63/3 (127-138), 41
reference(s)

CODEN: PCBPBS ISSN: 0048-3575

DT Journal; Article

CY United States

LA English

SL English

L49 ANSWER 2 OF 6 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 1

TI Bacterial **glutathione S-transferases**: What
are they good for?.

SO Journal of Bacteriology, (1997) 179/5 (1431-1441).

Refs: 94

ISSN: 0021-9193 CODEN: JOBAAY

AU Vuilleumier S.

AN 97071227 EMBASE

L49 ANSWER 3 OF 6 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN

AN 1997147773 ESBIOBASE

TI Soluble overexpression in Escherichia coli, and purification and
characterization of wild-type recombinant tobacco acetolactate synthase

AU Chang S.-I.; Kang M.-K.; Choi J.-D.; Namgoong S.K.

CS S.-I. Chang, Department of Biochemistry, Chungbuk National University,
Cheongju 361-763, South Korea.

E-mail: sichang@cbucc.chungbuk.ac.kr

SO Biochemical and Biophysical Research Communications, (1997), 234/3
(549-553), 35 reference(s)

CODEN: BBRCA0 ISSN: 0006-291X

DT Journal; Article

CY United States

LA English

SL English

L49 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
TI GENETICALLY **ENGINEERED** PLANTS FOR **HERBICIDE**
RESISTANCE.

SO Biotechnol. Agric. Ser., (1992) pp. 75-107. GATEHOUSE, A. M. R., V. A.
HILDER AND D. BOULTER (ED.). BIOTECHNOLOGY IN AGRICULTURE, NO. 7. PLANT
GENETIC MANIPULATION FOR CROP PROTECTION. XIII+266P. C.A.B. INTERNATIONAL:
WALLINGFORD, ENGLAND, UK; TUCSON, ARIZONA, USA. ILLUS.
Publisher: Series: Biotechnology in Agriculture Series.
CODEN: BIAGEN. ISSN: 0960-202X. ISBN: 0-85198-707-9.

AU MULLINEAUX P M [Reprint author]

AN 1992:419952 BIOSIS

L49 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
TI TOTAL CHEMICAL SYNTHESIS AND EXPRESSION IN ESCHERICHIA-COLI OF A MAIZE
GLUTATHIONE TRANSFERASE **GST** GENE.

SO Gene (Amsterdam), (1989) Vol. 76, No. 1, pp. 153-160.
CODEN: GENED6. ISSN: 0378-1119.

AU WOSNICK M A [Reprint author]; BARNETT R W; CARLSON J E

AN 1989:268026 BIOSIS

L49 ANSWER 6 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

TI Structural analysis of a maize gene coding for **glutathione-**
S-transferase involved in **herbicide**
detoxification;

cloning and DNA sequence
SO Plant Mol.Biol.; (1986) 6, 4, 203-11
CODEN: PMBIDB

AU Shah D M; Hironaka C M; Wiegand R C; Harding E I; Krivi G G; Tiemeier C

AN 1986-05927 BIOTECHDS

=> d ab tot

L49 ANSWER 1 OF 6 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN

AB **Glutathione S-transferases** (GSTs) are
involved in detoxification of a wide variety of electrophilic compounds
including **herbicides**. Several corn isoforms (GSTs) have been
studied for their ability to conjugate these substrates with reduced
glutathione (GSH). Three cDNAs, encoding corn **GST** subunits of
29, 27, and 26 kDa, respectively, were cloned into expression systems in
Escherichia coli. N-terminal 6xHis-tagged recombinant **GST**
isoforms I, II, III, and IV were purified with nickel-nitrilotriacetic
acid (Ni-NTA) metal-affinity chromatography and were analyzed
biochemically. As the corn enzymes, each recombinant **GST**
isoform also consists of two subunits. Using three different **GST**
-substrates, recombinant isoforms showed similar substrate specificities
as natural corn GSTs. Some **GST** isoforms may be involved in the
defense response to oxidative stress in plants. Besides standard
GST activities, inactivation of endogenous, toxic
 α,β -unsaturated aldehydes was measured. Furthermore two
recombinant **GST** isoforms (**GST** II and **GST**
IV) showed high glutathione peroxidase activity using three different
organic hydroperoxides as substrates. Apparently, **GST** isoforms
including the 27-kDa subunit show glutathione peroxidase activity.

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on STN DUPLICATE 1

L49 ANSWER 3 OF 6 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
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AB Acetolactate synthase (ALS) is the first common enzyme in the

biosynthesis of L-leucine, L-isoleucine, and L-valine. The wild-type ALS gene from *Nicotiana tabacum* was cloned into the bacterial expression vector pGEX-2T. The resulting recombinant plasmid pGEX-ALS2 was used to transform *Escherichia coli* strain XL1-Blue, and the wild-type tobacco ALS (wALS) was expressed in the bacteria as a protein fused with **glutathione S-transferase (GST)**.

The fusion product **GST-wALS** was purified in a single step on a glutathione-Sepharose column. The purified **GST-wALS** was sensitive to a sulfonylurea **herbicide**, and was lost its sensitivity to end products, L-valine, L-leucine and L-isoleucine. These results suggest that the purified recombinant tobacco ALS was functionally active, and that the sulfonylureas may not bind to the feedback regulatory site on the plant ALS.

L49 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

L49 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

AB We have constructed a totally synthetic gene encoding a maize

glutathione S-transferase (GST I).

This gene, composed of 1320 nucleotides (nt) (660 bp), was assembled from only 16 synthetic oligodeoxynucleotides (average length 83 nt), using an efficient one-step annealing/ligation protocol. Sequencing was performed to verify the authenticity of the final assembled gene. Significantly, not a single mutation was found in either of the two constructs sequenced, indicating a remarkably low mutation frequency. The synthetic gene was introduced into *Escherichia coli* where it was successfully expressed. The biological activity of the **GST I** enzyme produced in *E. coli* was monitored by assaying bacterial extracts for the ability to conjugate [¹⁴C]atrazine in the presence of glutathione. This biologically active synthetic GST1 gene can now be introduced into plants to assess its ability to confer tolerance to the triazine class of **herbicides**.

L49 ANSWER 6 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

AB **Glutathione-S-transferase (GSTs)** are a

family of enzymes able to detoxify sulfhydryl **herbicides**. A cDNA clone encoding **GST/I** of maize was obtained by screening a lambda-gt10 cDNA library of maize polyA+ RNA with a mixed synthetic oligonucleotide probe based on the previously determined amino acid sequence of **GST I** polypeptide. This **GST I** cDNA clone, pMON9000, contains an insert of approximately 740 bp which is sufficient to encode the entire protein coding sequence. Using this insert as a hybridization probe the organization of nuclear gene encoding the **GST I** polypeptide was examined and a 10.2 kb EcoRI fragment was obtained from the inbred maize line Missouri 17 DNA which contains the entire **GST I** coding sequence. This EcoRI fragment was cloned and the DNA sequence of this and the cDNA clone determined. The mRNA homologous sequences in the maize **GST I** gene consisted of a 107 bp 5' untranslated region, a 642 bp coding region and 340 bp of the 3' untranslated region. They were divided into 3 exons. This should facilitate further molecular genetic **engineering** of this enzyme. (25 ref)

=> s 136 and plant#

FILE 'MEDLINE'

238000 PLANT#

L50 1 L25 AND PLANT#

FILE 'SCISEARCH'

390465 PLANT#

L51 2 L26 AND PLANT#

FILE 'LIFESCI'

163754 PLANT#

L52 0 L27 AND PLANT#

FILE 'BIOTECHDS'

56623 PLANT#

L53 3 L28 AND PLANT#

FILE 'BIOSIS'

2314416 PLANT#

L54 25 L29 AND PLANT#

FILE 'EMBASE'

178218 PLANT#

L55 1 L30 AND PLANT#

FILE 'HCAPLUS'

909118 PLANT#

L56 10 L31 AND PLANT#

FILE 'NTIS'

145402 PLANT#

L57 0 L32 AND PLANT#

FILE 'ESBIOBASE'

308875 PLANT#

L58 18 L33 AND PLANT#

FILE 'BIOTECHNO'

98706 PLANT#

L59 3 L34 AND PLANT#

FILE 'WPIDS'

254212 PLANT#

L60 0 L35 AND PLANT#

TOTAL FOR ALL FILES

L61 63 L36 AND PLANT#

=> dup rem l61

PROCESSING COMPLETED FOR L61

L62 49 DUP REM L61 (14 DUPLICATES REMOVED)

=> d tot

L62 ANSWER 1 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Functional domain analysis of the yeast ABC transporter Ycflp by
site-directed mutagenesis.

SO Journal of Biological Chemistry, (Aug. 13, 1999) Vol. 274, No. 33, pp.
23584-23590. print.

CODEN: JBCHA3. ISSN: 0021-9258.

AU Falcon-Perez, Juan M.; Mazon, Maria J.; Molano, Jesus; Eraso, Pilar
[Reprint author]

AN 1999:468037 BIOSIS

L62 ANSWER 2 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN

AN 1999154929 ESBIOBASE

TI Molecular cloning and characterization of MT-ACT48, a novel mitochondrial
acyl-CoA thioesterase

AU Poupon V.; Begue B.; Gagnon J.; Dautry-Varsat A.; Cerf-Bensussan N.;
Benmerah A.

CS A. Benmerah, CJF 97-10 INSERM, Faculte Necker-Enfants Malades, 156 rue de
Vaugirard, 75756 Paris Cedex 15, France.

E-mail: benmerah@necker.fr

SO Journal of Biological Chemistry, (02 JUL 1999), 274/27 (19188-19194), 34
reference(s)
CODEN: JBCHA3 ISSN: 0021-9258

DT Journal; Article
CY United States
LA English
SL English

L62 ANSWER 3 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Dbp5, a DEAD-box protein required for mRNA export, is recruited to the
cytoplasmic fibrils of nuclear pore complex via a conserved interaction
with CAN/Nup159p.

SO EMBO (European Molecular Biology Organization) Journal, (Aug. 2, 1999)
Vol. 18, No. 15, pp. 4332-4347. print.
CODEN: EMJODG. ISSN: 0261-4189.

AU Schmitt, Christel; von Kobbe, Cayetano; Bachi, Angela; Pante, Nelly;
Rodrigues, Joao P.; Boscheron, Cecile; Rigaut, Guillaume; Wilm, Matthias;
Seraphin, Bertrand; Carmo-Fonseca, Maria; Izaurralde, Elisa [Reprint
author]

AN 1999:449640 BIOSIS

L62 ANSWER 4 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Molecular **engineering** of **plants** with tolerance to
photooxidative damage

SO Tanpakushitsu Kakusan Koso (1999), 44(15, Zokan), 2246-2252
CODEN: TAKKAJ; ISSN: 0039-9450

AU Shigeoka, Shigeru; Tamoi, Masahiro; Miyagawa, Yoshiko

AN 1999:723375 HCAPLUS

DN 131:334556

L62 ANSWER 5 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Enhancement of scopolamine production in Hyoscyamus muticus hairy root
cultures by genetic **engineering**

SO Planta (1999), 208(4), 545-551
CODEN: PLANAB; ISSN: 0032-0935

AU Jouhikainen, Katja; Lindgren, Laura; Jokelainen, Tuula; Hiltunen, Raimo;
Teeri, Teemu H.; Oksman-Caldentey, Kirsi-Marja

AN 1999:430851 HCAPLUS

DN 131:98203

L62 ANSWER 6 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Regulated phosphorylation of the Gal4p inhibitor Gal80p of Kluyveromyces
lactis revealed by mutational analysis.

SO Biological Chemistry, (April, 1999) Vol. 380, No. 4, pp. 419-430. print.
ISSN: 1431-6730.

AU Zenke, Frank T.; Kapp, Lutz; Breunig, Karin D. [Reprint author]

AN 1999:356277 BIOSIS

L62 ANSWER 7 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN

AN 1999254167 ESBIODBASE

TI Over-expression and characterization of copper/zinc-superoxide dismutase
from rice in Escherichia coli

AU Pan S.-M.; Hwang G.-B.; Liu H.-C.

CS S.-M. Pan, Department of Botany, National Taiwan University, Taipei,
Taiwan.
E-mail: pan@ccms.ntu.edu.tw

SO Botanical Bulletin of Academia Sinica, (1999), 40/4 (275-281), 38
reference(s)
CODEN: BBASA6 ISSN: 0006-8063

DT Journal; Article
CY Taiwan, Province of China

LA English
SL English; Chinese

L62 ANSWER 8 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Monitoring of adsorbate breakthrough curves within an expanded bed
adsorption column.

SO Journal of Chemical Technology and Biotechnology, (March, 1999) Vol. 74,
No. 3, pp. 264-269. print.
CODEN: JCTBED. ISSN: 0268-2575.

AU Bruce, Lynda J.; Clemmitt, Robert H.; Nash, Dominic C.; Chase, Howard A.
[Reprint author]

AN 1999:208276 BIOSIS

L62 ANSWER 9 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Evaluation of the hrpN gene for increasing resistance to fire blight in
transgenic apple

SO Acta Horticulturae (1999), 489(Eighth International Workshop on Fire
Blight, 1998), 247-250
CODEN: AHORA2; ISSN: 0567-7572

AU Abdul-Kader, A. M.; Norelli, J. L.; Aldwinckle, H. S.; Bauer, D. W.; Beer,
S. V.

AN 1999:775103 HCAPLUS

DN 132:274940

L62 ANSWER 10 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

AN 1999198043 ESBIIOBASE

TI Characterization of recombinant corn **glutathione S-
transferase** isoforms I, II, III, and IV

AU Sommer A.; Boger P.

CS A. Sommer, Lehrstuhl für Physiologie, Biochemie der Pflanzen, Universität
Konstanz, D-78457 Konstanz, Germany.

SO Pesticide Biochemistry and Physiology, (1999), 63/3 (127-138), 41
reference(s)

CODEN: PCBPBS ISSN: 0048-3575

DT Journal; Article

CY United States

LA English

SL English

L62 ANSWER 11 OF 49 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 1

TI Expression of a novel ethylene-producing bifunctional fusion enzyme in
yeast

SO BOTANICAL BULLETIN OF ACADEMIA SINICA, (APR 1999) Vol. 40, No. 2, pp.
107-114.

Publisher: ACAD SINICA INST BOTANY, NANKANG, TAIPEI 11529, TAIWAN.

ISSN: 0006-8063.

AU Lu B W; Yu B; Li N (Reprint)

AN 1999:373565 SCISEARCH

L62 ANSWER 12 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI The bromodomain of Gcn5p interacts in vitro with specific residues in the
N terminus of histone H4.

SO Journal of Molecular Biology, (March 19, 1999) Vol. 287, No. 1, pp. 1-7.
print.

CODEN: JMOBAK. ISSN: 0022-2836.

AU Ornaghi, Prisca; Ballario, Paola; Lena, Anna Maria; Gonzalez, Alicia;
Filetici, Patrizia [Reprint author]

AN 1999:203337 BIOSIS

L62 ANSWER 13 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Increasing levels of foreign gene expression in **plants** using
introns 1-2 and/or chloroplast transit peptide-encoding exons of the PAT1
gene
SO PCT Int. Appl., 86 pp.
CODEN: PIXXD2
IN Rose, Alan B.; Last, Robert L.
AN 1998:221120 HCAPLUS
DN 128:291135

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9814604	A1	19980409	WO 1997-US18024	19971002
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5861277	A	19990119	US 1996-723624	19961002
	AU 9748952	A1	19980424	AU 1997-48952	19971002

L62 ANSWER 14 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN
AN 1998049346 ESBIOBASE
TI MP2C, a **plant** protein phosphatase 2C, functions as a negative
regulator of mitogen-activated protein kinase pathways in yeast and
plants
AU Meskiene I.; Bogre L.; Glaser W.; Balog J.; Brandstotter M.; Zwerger K.;
Ammerer G.; Hirt H.
CS H. Hirt, Inst. of Microbiology and Genetics, Vienna Biocenter, Dr.
Bohrgasse 9, A-1030 Vienna, Austria.
E-mail: HEHI@GEM.UNIVIE.AC.AT
SO Proceedings of the National Academy of Sciences of the United States of
America, (17 FEB 1998), 95/4 (1938-1943), 29 reference(s)
CODEN: PNASA6 ISSN: 0027-8424
DT Journal; Article
CY United States
LA English
SL English

L62 ANSWER 15 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN
AN 1998244972 ESBIOBASE
TI Cloning, recombinant expression and characterization of wild
type-105-Trp-calmodulin of the green alga Mougeotia scalaris
AU Zorb Chr.; Brunner K.D.; Perbandt M.; Betzel Chr.; Wagner G.
CS Chr. Zorb, Membran- und Bewegungsphysiologie, Fachbereich Biologie -
Botanik, Justus-Liebig-Universität, Senckenbergstrasse 17, D-35 390
Giessen, Germany.
E-mail: Christian.Zoerb@bot1.bio.uni-giessen.de
SO Botanica Acta, (1998), 111/5 (346-353), 59 reference(s)
CODEN: BOACEJ ISSN: 0932-8629
DT Journal; Article
CY Germany, Federal Republic of
LA English
SL English

L62 ANSWER 16 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN
AN 1998180660 ESBIOBASE
TI Expression of sunflower homeodomain containing proteins in Escherichia
coli: Purification and functional studies
AU Palena C.M.; Gonzalez D.H.; Guelman S.A.; Chan R.L.

CS R.L. Chan, Area Biologia Molecular, Fac. de Cie. Bioquim. Farmaceuticas,
 Prog. Multidisciplinario Biol. Exp., Suipacha 531, 2000 Rosario,
 Argentina.
 E-mail: chan@unrobi.edu.ar
 SO Protein Expression and Purification, (1998), 13/1 (97-103), 30
 reference(s)
 CODEN: PEXPEJ ISSN: 1046-5928
 DT Journal; Article
 CY United States
 LA English
 SL English

L62 ANSWER 17 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN
 TI Method for controlling seed germination using soybean acyl CoA oxidase
 gene sequences
 SO PCT Int. Appl., 90 pp.
 CODEN: PIXXD2
 IN Agarwal, Ametta Kishore; Brown, Sherri Marie; Qi, Youlin
 AN 1997:776268 HCAPLUS
 DN 128:58322

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 9744465	A1	19971127	WO 1997-US8732	19970520
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9731394	A1	19971209	AU 1997-31394	19970520

L62 ANSWER 18 OF 49 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
 TI Construction and characterization of Escherichia coli genetically
engineered for bioremediation of Hg²⁺-contaminated environments;
 bacterium transformation with plasmid pGEX-2T, pGYMT, pGRYMT, pGHMT or
 pGPMT3 for mercury heavy metal recovery
 SO Appl. Environ. Microbiol.; (1997) 63, 6, 2442-45
 CODEN: AEMIDF ISSN: 0099-2240
 AU Chen S; *Wilson D B
 AN 1997-07730 BIOTECHDS

L62 ANSWER 19 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN
 TI Construction and characterization of Escherichia coli genetically
engineered for bioremediation of Hg-2+-contaminated environments.
 SO Applied and Environmental Microbiology, (1997) Vol. 63, No. 61, pp.
 2442-2445.
 CODEN: AEMIDF. ISSN: 0099-2240.
 AU Chen, Shaolin; Wilson, David B. [Reprint author]
 AN 1997:294639 BIOSIS

L62 ANSWER 20 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN
 TI Overexpression of **glutathione S-transferase**
 /glutathione peroxidase enhances the growth of transgenic tobacco
 seedlings during stress.
 SO Nature Biotechnology, (Oct., 1997) Vol. 15, No. 10, pp. 988-991. print.
 ISSN: 1087-0156.
 AU Roxas, Virginia P.; Smith, Roger K., Jr.; Allen, Eric R.; Allen, Randy D.
 [Reprint author]
 AN 1998:93687 BIOSIS

L62 ANSWER 21 OF 49 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 3

TI **Engineering stress tolerance in transgenic plants**

SO ACTA PHYSIOLOGIAE PLANTARUM, (JUL-AUG 1997) Vol. 19, No. 4, pp. 591-594.
Publisher: WARSAW AGRICULTURAL UNIV, DEPT PLANT PHYSIOLOGY, RAKOWIECKA
26/30, 02-528 WARSAW, POLAND.
ISSN: 0137-5881.

AU Roxas V P (Reprint); Wang J; Lodhi S; Allen R D

AN 1998:160402 SCISEARCH

L62 ANSWER 22 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

AN 1997147773 ESBIODBASE

TI Soluble overexpression in Escherichia coli, and purification and
characterization of wild-type recombinant tobacco acetolactate synthase

AU Chang S.-I.; Kang M.-K.; Choi J.-D.; Namgoong S.K.

CS S.-I. Chang, Department of Biochemistry, Chungbuk National University,
Cheongju 361-763, South Korea.
E-mail: sichang@cbucc.chungbuk.ac.kr

SO Biochemical and Biophysical Research Communications, (1997), 234/3
(549-553), 35 reference(s)
CODEN: BBRC A0 ISSN: 0006-291X

DT Journal; Article

CY United States

LA English

SL English

L62 ANSWER 23 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

AN 1997163181 ESBIODBASE

TI Expression, purification and characterization of GDP-D-mannose
4,6-dehydratase from Escherichia coli

AU Sturla L.; Bisso A.; Zanardi D.; Benatti U.; De Flora A.; Tonetti M.

CS M. Tonetti, Institute of Biochemistry, University of Genova, Viale
Bendetto XV, 1, 16132 Genova, Italy.
E-mail: toninodf@unige.it

SO FEBS Letters, (1997), 412/1 (126-130), 27 reference(s)
CODEN: FEBLAL ISSN: 0014-5793

PUI S001457939700762X

DT Journal; Article

CY Netherlands

LA English

SL English

L62 ANSWER 24 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Expression of catalytically active barley glutamyl tRNA-Glu reductase in
Escherichia coli as a fusion protein with **glutathione S**
-transferase.

SO Proceedings of the National Academy of Sciences of the United States of
America, (1996) Vol. 93, No. 17, pp. 9287-9291.
CODEN: PNASA6. ISSN: 0027-8424.

AU Vothknecht, Ute C.; Kannangara, C. Gamini; Von Wettstein, Diter [Reprint
author]

AN 1996:436506 BIOSIS

L62 ANSWER 25 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

AN 1996070845 ESBIODBASE

TI RNA-binding activities of barley stripe mosaic virus γ b fusion
proteins

AU Donald R.G.K.; Jackson A.O.

CS A.O. Jackson, Department of Plant Biology, University of California,
Berkeley, CA 94720, United States.

SO Journal of General Virology, (1996), 77/5 (879-888)
 CODEN: JGVIAI ISSN: 0022-1317
 DT Journal; Article
 CY United Kingdom
 LA English
 SL English

L62 ANSWER 26 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN
 TI Protein **engineering** studies of dichloromethane dehalogenase/
glutathione S-transferase from *Methylophilus*
 sp. strain DM11: Ser12 but not Tyr6 is required for enzyme activity.
 SO European Journal of Biochemistry, (1996) Vol. 239, No. 2, pp. 410-417.
 CODEN: EJBCAI. ISSN: 0014-2956.
 AU Vuilleumier, Stephane [Reprint author]; Leisinger, Thomas
 AN 1996:385690 BIOSIS

L62 ANSWER 27 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
 on STN
 AN 1996037918 ESBIOBASE
 TI Expression of Zm13, a pollen specific maize protein, in *Escherichia coli*
 reveals IgE-binding capacity and allergenic potential
 AU Heiss S.; Flicker S.; Hamilton D.A.; Kraft D.; Mascarenhas J.P.; Valenta
 R.
 CS R. Valenta, Inst. of General and Exp. Pathology, AKH, University of
 Vienna, Währinger Gürtel 18-20, A-1090 Vienna, Austria.
 SO FEBS Letters, (1996), 381/3 (217-221)
 CODEN: FEBLAL ISSN: 0014-5793
 DT Journal; Article
 CY Netherlands
 LA English
 SL English

L62 ANSWER 28 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN
 TI A novel yeast protein showing specific association with the
 cyclin-dependent kinase 5.
 SO FEBS Letters, (1996) Vol. 378, No. 1, pp. 48-50.
 CODEN: FEBLAL. ISSN: 0014-5793.
 AU Huang, Q.-Q.; Lee, K.-Y.; Wang, J. H. [Reprint author]
 AN 1996:75174 BIOSIS

L62 ANSWER 29 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
 on STN
 AN 1996029937 ESBIOBASE
 TI Co-purification from *Escherichia coli* of a **plant**
 β -glucosidase- **glutathione S-transferase**
 fusion protein and the bacterial chaperonin GroEL
 AU Keresztessy Z.; Hughes J.; Kiss L.; Hughes M.A.
 CS M.A. Hughes, Department Biochemistry and Genetics, University of
 Newcastle upon Tyne, Newcastle upon Tyne NE2 4HH, United Kingdom.
 SO Biochemical Journal, (1996), 314/1 (41-47)
 CODEN: BIJOAK ISSN: 0264-6021
 DT Journal; Article
 CY United Kingdom
 LA English
 SL English

L62 ANSWER 30 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN
 TI Nucleotide sequence of soybean stearyl-[acyl carrier protein] desaturase
 gene and genetic **engineering** of stearic acid content in
plant oils
 SO U.S., 25 pp. Cont.-in-part of U.S. Ser. No. 529,049, abandoned.
 CODEN: USXXAM

IN Hitz, William D.; Yadav, Narendra S.; Perez-Grau, Luis
AN 1995:810914 HCAPLUS
DN 123:248579

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5443974	A	19950822	US 1992-995657	19921211
	US 5760206	A	19980602	US 1995-474587	19950607

L62 ANSWER 31 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN

AN 1995127744 ESBIOBASE

TI The precursor of pea ferredoxin-NADP.sup.+ reductase synthesized in Escherichia coli contains bound FAD and is transported into chloroplasts
AU Serra E.C.; Krapp A.R.; Ottado J.; Feldman M.F.; Ceccarelli E.A.; Carrillo N.

CS N. Carrillo, Molecular Biology Section, Departamento de Ciencias Biologicas, Universidad Nacional de Rosario, Suipacha 531, Rosario 2000, Argentina.

SO Journal of Biological Chemistry, (1995), 270/34 (19930-19935)
CODEN: JBCHA3 ISSN: 0021-9258

DT Journal; Article

CY United States

LA English

SL English

L62 ANSWER 32 OF 49 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

TI Forced evolution of **glutathione-S-transferase** to create a more efficient drug detoxification enzyme; enzyme **engineering** and potential gene therapy

SO Proc.Natl.Acad.Sci.U.S.A.; (1995) 92, 18, 8140-44
CODEN: PNASA6 ISSN: 0027-8424

AU Gulick A M; *Fahl W E

AN 1995-13238 BIOTECHDS

L62 ANSWER 33 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

TI Secretion and affinity purification of **glutathione S-transferase** fusion proteins from yeast.

SO Biotechnology Techniques, (1995) Vol. 9, No. 11, pp. 821-826.
CODEN: BTECE6. ISSN: 0951-208X.

AU Castelli, L. A.; Petris, A. J.; Carroll, S. M.; Macreadie, I. G. [Reprint author]

AN 1996:20174 BIOSIS

L62 ANSWER 34 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

TI Studies on Vitamin B-6- and Glutathione-Related Microbial Enzymes.

SO Vitamins (Kyoto), (1995) Vol. 69, No. 8, pp. 417-431.
CODEN: BTMNA7. ISSN: 0006-386X.

AU Kumagai, Hidehiko

AN 1995:452372 BIOSIS

L62 ANSWER 35 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

TI Production of a phosphorylated **GST**:: HPV-6 E7 fusion protein using a yeast expression vector and **glutathione S-transferase** fusions.

SO Gene (Amsterdam), (1995) Vol. 152, No. 1, pp. 137-138.
CODEN: GENED6. ISSN: 0378-1119.

AU Romanos, Michael A. [Reprint author]; Hughes, Fiona J.; Comerford, Sarah A.; Scorer, Carol A.

AN 1995:124351 BIOSIS

L62 ANSWER 36 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on

STN

TI A **glutathione S-transferase** fusion protein
with the starch-binding domain of *Aspergillus glucoamylase*.
SO Bajpai, R. K. [Editor]; Prokop, A. [Editor]. Ann. N. Y. Acad. Sci., (1994)
pp. 160-167. Annals of the New York Academy of Sciences; Recombinant DNA
technology II.
Publisher: New York Academy of Sciences, 2 East 63rd Street, New York, New
York 10021, USA. Series: Annals of the New York Academy of Sciences.
Meeting Info.: Conference. Palm Coast, Florida, USA. January 31-February
5, 1993.
CODEN: ANYAA9. ISSN: 0077-8923. ISBN: 0-89766-822-7 (paper), 0-89766-821-9
(cloth).
AU Dalmia, B. K.; Nikolov, Z. L. [Reprint author]
AN 1994:418637 BIOSIS

L62 ANSWER 37 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Large-scale production and characterization of recombinant human
immunodeficiency virus type 1 Nef.
SO Journal of General Virology, (1994) Vol. 75, No. 3, pp. 651-655.
CODEN: JGVIAY. ISSN: 0022-1317.
AU Azad, Ahmed A.; Failla, Paul; Lucantoni, Anna; Bentley, John; Mardon,
Chris; Wolfe, Andrew; Fuller, Kerri; Hewish, Dean; Sengupta, Shomik
AN 1994:187661 BIOSIS

L62 ANSWER 38 OF 49 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Functional expression of *Arabidopsis thaliana* anthranilate synthase
subunit I in *Escherichia coli*
SO Plant Physiology (1994), 106(1), 353-8
CODEN: PLPHAY; ISSN: 0032-0889
AU Bernasconi, Paul; Walters, Eric W.; Woodworth, Alison R.; Siehl, Daniel
L.; Stone, Tracey E.; Subramanian, Mani V.
AN 1994:600562 HCAPLUS
DN 121:200562

L62 ANSWER 39 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Expression of the non-structural protein NS1 of bluetongue virus in
bacteria and yeast: Identification of two antigenic sites at the amino
terminus.
SO Virus Research, (1994) Vol. 31, No. 3, pp. 291-303.
CODEN: VIREDF. ISSN: 0168-1702.
AU Gould, Allan R. [Reprint author]; Martyn, John C.; Stevenson, Lisa
AN 1994:210973 BIOSIS

L62 ANSWER 40 OF 49 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

AN 1994110791 ESBIODBASE
TI In vitro mutation analysis of *Arabidopsis thaliana* small GTP-binding
proteins and detection of GAP-like activities in **plant** cells
AU Anai T.; Matsui M.; Nomura N.; Ishizaki R.; Uchimiya H.
CS H. Uchimiya, Institute Molecular/Cell Biosciences, University of Tokyo,
Bunkyo-ku, Tokyo 113, Japan.
SO FEBS Letters, (1994), 346/2-3 (175-180)
CODEN: FEBLAL ISSN: 0014-5793
DT Journal; Article
CY Netherlands
LA English
SL English

L62 ANSWER 41 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Production of oryzacystatins I and II in *Escherichia coli* using the
glutathione S-transferase gene fusion system.

SO Biotechnology Progress, (1994) Vol. 10, No. 2, pp. 155-159.
 CODEN: BIPRET. ISSN: 8756-7938.

AU Michaud, Dominique; Binh Nguyen-Quoc; Yelle, Serge [Reprint author]
 AN 1994:224402 BIOSIS

L62 ANSWER 42 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN

TI Expression of **plant** chorismate synthases in E. coli.

SO Plant Physiology (Rockville), (1994) Vol. 105, No. 1 SUPPL., pp. 129.
 Meeting Info.: Annual Meeting of the American Society of Plant
 Physiologists. Portland, Oregon, USA. July 30-August 3, 1994.
 CODEN: PLPHAY. ISSN: 0032-0889.

AU Henstrand, John M.; Schmid, Jurg; Amrhein, Nikolaus
 AN 1994:340619 BIOSIS

L62 ANSWER 43 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN

TI Mutations in a protein tyrosine phosphatase gene (PTP2) and a protein
 serine/threonine phosphatase gene (PTC1) cause a synthetic growth defect
 in Saccharomyces cerevisiae.

SO Molecular and Cellular Biology, (1993) Vol. 13, No. 9, pp. 5408-5417.
 CODEN: MCEBD4. ISSN: 0270-7306.

AU Maeda, Tatsuya; Tsai, Alex Y. M.; Saito, Haruo [Reprint author]
 AN 1993:478288 BIOSIS

L62 ANSWER 44 OF 49 MEDLINE on STN DUPLICATE 5

TI The N-terminal protein of the polyprotein encoded by the potyvirus tobacco
 vein mottling virus is an RNA-binding protein.

SO Journal of general virology, (1993 Jun) 74 (Pt 6) 1157-62.
 Journal code: 0077340. ISSN: 0022-1317.

AU Brantley J D; Hunt A G
 AN 93286570 MEDLINE

L62 ANSWER 45 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN DUPLICATE 6

TI One-step purification of **plant** ferredoxin-NADP+ oxidoreductase
 expressed in Escherichia coli as fusion with **glutathione**
S-transferase.

SO Protein Expression and Purification, (1993) Vol. 4, No. 6, pp. 539-546.
 CODEN: PEXPEJ. ISSN: 1046-5928.

AU Serra, Esteban C.; Carrillo, Nestor; Krapp, Adriana R.; Ceccarelli,
 Eduardo A. [Reprint author]
 AN 1994:67847 BIOSIS

L62 ANSWER 46 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN

TI GENETICALLY **ENGINEERED PLANTS** FOR HERBICIDE
 RESISTANCE.

SO Biotechnol. Agric. Ser., (1992) pp. 75-107. GATEHOUSE, A. M. R., V. A.
 HILDER AND D. BOULTER (ED.). BIOTECHNOLOGY IN AGRICULTURE, NO. 7. PLANT
 GENETIC MANIPULATION FOR CROP PROTECTION. XIII+266P. C.A.B. INTERNATIONAL:
 WALLINGFORD, ENGLAND, UK; TUCSON, ARIZONA, USA. ILLUS.
 Publisher: Series: Biotechnology in Agriculture Series.
 CODEN: BIAGEN. ISSN: 0960-202X. ISBN: 0-85198-707-9.

AU MULLINEAUX P M [Reprint author]
 AN 1992:419952 BIOSIS

L62 ANSWER 47 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN

TI MULTIPLE ENZYMATIC PATHWAYS INVOLVED IN THE METABOLISM OF GLYCERYL
 TRINITRATE IN PHANEROCHAETE-CHRYSPORIUM.

SO Biotechnology and Applied Biochemistry, (1992) Vol. 15, No. 3, pp.
 257-266.
 CODEN: BABIEC. ISSN: 0885-4513.

AU SERVENT D [Reprint author]; DUCROCQ C; HENRY Y; SERVY C; LENFANT M
 AN 1992:346481 BIOSIS

L62 ANSWER 48 OF 49 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
 TI TOTAL CHEMICAL SYNTHESIS AND EXPRESSION IN ESCHERICHIA-COLI OF A MAIZE
 GLUTATHIONE TRANSFERASE **GST** GENE.
 SO Gene (Amsterdam), (1989) Vol. 76, No. 1, pp. 153-160.
 CODEN: GENED6. ISSN: 0378-1119.

AU WOSNICK M A [Reprint author]; BARNETT R W; CARLSON J E
 AN 1989:268026 BIOSIS

L62 ANSWER 49 OF 49 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
 TI Structural analysis of a maize gene coding for **glutathione-S-transferase** involved in herbicide detoxification;
 cloning and DNA sequence
 SO Plant Mol.Biol.; (1986) 6, 4, 203-11
 CODEN: PMBIDB

AU Shah D M; Hironaka C M; Wiegand R C; Harding E I; Krivi G G; Tiemeier C
 AN 1986-05927 BIOTECHDS

=> d ab 21,32

L62 ANSWER 21 OF 49 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
 on STN DUPLICATE 3

AB Research in our laboratory has focused on the analysis of the functions of a variety of enzymes that are involved in the scavenging of reactive oxygen intermediates (ROI) such as superoxide radicals (O₂⁻) and hydrogen peroxide (H₂O₂). Recent work has been on transgenic **plants** that over-express **glutathione S-transferases (GST)** that also have glutathione peroxidase activity. Transgenic tobacco **plants** that contain gene constructs that encode two different tobacco GSTs had elevated levels of both **GST** and GPX activity. Analysis of mature vegetative transgenic tobacco **plants** that over-express **GST/GPX** failed to show any increase in paraquat tolerance or protection from photooxidative stress. However, seeds of these **GST/GPX**-expressing tobacco lines are capable of more rapid germination and seedling growth at low temperatures and at elevated salt concentrations. Reduced levels of lipid peroxidation were noted in **GST/GPX**-expressing seedling compared to control seedlings under both stressful and non-stressful conditions. In addition, **GST/GPX**-expressing seedlings significantly accumulated more oxidized glutathione (GSSG) than control seedlings during stress. These characteristics clearly indicate that over-expression of **GST/GPX** in transgenic seedlings can have substantial effects on their stress tolerance. Furthermore, it appears that this effect is due primarily to the elevated levels of GPX activity.

L62 ANSWER 32 OF 49 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
 AB Glutathione-transferase (**GST**, EC-2.5.1.18) in mammalian cells catalyzes the conjugation and detoxication of structurally diverse electrophilic environmental carcinogens and alkylating drugs, e.g. the antineoplastic nitrogen mustards. Structural alteration of the nonspecific electrophile-binding site (EBS) may produce recombinant enzymes with increased efficiency for detoxication of a single drug. These mutants could be useful somatic transgenes to protect healthy human cells against single alkylating agents in cancer chemotherapy. Random mutagenesis of residues 9-14, 102-112 and 210-220 from the **GST** EBS and selection of Escherichia coli expressing the enzyme library with mechlorethamine (20-500 uM) gave mutant enzyme with increased catalytic efficiency for mechlorethamine conjugation (up to 15-fold increase in kcat and up to 6-fold increase in kcat/Km) and conferring up to 31-fold resistance (9-fold greater drug-resistance than that conferred by the

wild-type **GST**). The method is useful for modification of drug- and carcinogen-metabolizing enzymes to achieve desired resistance in both prokaryotic and eukaryotic **plant** and animal cells. (38 ref)

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=> s l12 and herbicide#
FILE 'MEDLINE'
      9782 HERBICIDE#
L63      103 L1 AND HERBICIDE#

FILE 'SCISEARCH'
      23835 HERBICIDE#
L64      248 L2 AND HERBICIDE#

FILE 'LIFESCI'
      6075 HERBICIDE#
L65      70 L3 AND HERBICIDE#

FILE 'BIOTECHDS'
      5341 HERBICIDE#
L66      44 L4 AND HERBICIDE#

FILE 'BIOSIS'
      48036 HERBICIDE#
L67      330 L5 AND HERBICIDE#

FILE 'EMBASE'
      9336 HERBICIDE#
L68      74 L6 AND HERBICIDE#

FILE 'HCAPLUS'
      80562 HERBICIDE#
L69      373 L7 AND HERBICIDE#

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L70      0 L8 AND HERBICIDE#

FILE 'ESBIOBASE'
      7623 HERBICIDE#
L71      119 L9 AND HERBICIDE#

FILE 'BIOTECHNO'
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L72      72 L10 AND HERBICIDE#

FILE 'WPIDS'
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L73      40 L11 AND HERBICIDE#

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L74      1473 L12 AND HERBICIDE#

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L75      63 L63 NOT 2000-2005/PY

FILE 'SCISEARCH'
      5097493 2000-2005/PY
L76      173 L64 NOT 2000-2005/PY

FILE 'LIFESCI'
      512467 2000-2005/PY
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L77 49 L65 NOT 2000-2005/PY

FILE 'BIOTECHDS'

105642 2000-2005/PY

L78 21 L66 NOT 2000-2005/PY

FILE 'BIOSIS'

2625073 2000-2005/PY

L79 241 L67 NOT 2000-2005/PY

FILE 'EMBASE'

2367945 2000-2005/PY

L80 52 L68 NOT 2000-2005/PY

FILE 'HCAPLUS'

5123281 2000-2005/PY

L81 243 L69 NOT 2000-2005/PY

FILE 'NTIS'

80220 2000-2005/PY

L82 0 L70 NOT 2000-2005/PY

FILE 'ESBIOBASE'

1468247 2000-2005/PY

L83 67 L71 NOT 2000-2005/PY

FILE 'BIOTECHNO'

491187 2000-2005/PY

L84 46 L72 NOT 2000-2005/PY

FILE 'WPIDS'

4509723 2000-2005/PY

L85 4 L73 NOT 2000-2005/PY

TOTAL FOR ALL FILES

L86 959 L74 NOT 2000-2005/PY

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467539 MUTA?

371663 MODIF?

101629 VARIANT#

L87 5 L75 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'SCISEARCH'

447924 MUTA?

491421 MODIF?

109923 VARIANT#

L88 14 L76 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'LIFESCI'

207369 MUTA?

93911 MODIF?

34346 VARIANT#

L89 2 L77 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'BIOTECHDS'

40667 MUTA?

33496 MODIF?

13488 VARIANT#

L90 4 L78 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'BIOSIS'

509889 MUTA?

368948 MODIF?
104432 VARIANT#
L91 12 L79 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'EMBASE'
387991 MUTA?
332451 MODIF?
88523 VARIANT#
L92 4 L80 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'HCAPLUS'
477584 MUTA?
899200 MODIF?
99930 VARIANT#
L93 17 L81 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'NTIS'
9780 MUTA?
96451 MODIF?
4523 VARIANT#
L94 0 L82 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'ESBIOBASE'
231679 MUTA?
141472 MODIF?
40395 VARIANT#
L95 5 L83 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'BIOTECHNO'
242571 MUTA?
86734 MODIF?
41198 VARIANT#
L96 4 L84 AND (MUTA? OR MODIF? OR VARIANT#)

FILE 'WPIDS'
26386 MUTA?
263718 MODIF?
25074 VARIANT#
L97 1 L85 AND (MUTA? OR MODIF? OR VARIANT#)

TOTAL FOR ALL FILES
L98 68 L86 AND (MUTA? OR MODIF? OR VARIANT#)

=> dup rem 198
PROCESSING COMPLETED FOR L98
L99 32 DUP REM L98 (36 DUPLICATES REMOVED)

=> d tot

L99 ANSWER 1 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN
TI Metabolic **modification** of isoimide type peroxidizing compounds
catalyzed by an isoenzyme of **glutathione S-**
transferase
SO Peroxidizing Herbicides (1999), 191-211. Editor(s): Boeger, Peter;
Wakabayashi, Ko. Publisher: Springer, Berlin, Germany.
CODEN: 67QRAI
AU Sato, Yukiharu
AN 1999:315115 HCAPLUS
DN 130:348452

L99 ANSWER 2 OF 32 MEDLINE on STN DUPLICATE 1
TI Functional complementation of anthocyanin sequestration in the vacuole by
widely divergent **glutathione S-transferases**.
SO Plant cell, (1998 Jul) 10 (7) 1135-49.

Journal code: 9208688. ISSN: 1040-4651.

AU Alfenito M R; Souer E; Goodman C D; Buell R; Mol J; Koes R; Walbot V
AN 1998334529 MEDLINE

L99 ANSWER 3 OF 32 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 2

TI Effects of the agrochemicals butachlor, pretilachlor and isoprothiolane on
rat liver xenobiotic-metabolizing enzymes.

SO Xenobiotica, (1998) 28/11 (1029-1039).

Refs: 37

ISSN: 0049-8254 CODEN: XENOBH

AU Ishizuka M.; Iwata H.; Kazusaka A.; Hatakeyama S.; Fujita S.

AN 1998420614 EMBASE

L99 ANSWER 4 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Cloning and expression analyses of AtMRP4 a novel MRP-like gene from
Arabidopsis thaliana

SO MOLECULAR & GENERAL GENETICS, (JUN 1998) Vol. 258, No. 6, pp. 655-662.

Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010.

ISSN: 0026-8925.

AU SanchezFernandez R; ArdilesDiaz W; VanMontagu M (Reprint); Inze D; May M J

AN 1998:556026 SCISEARCH

L99 ANSWER 5 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN DUPLICATE 3

TI Expression in Escherichia coli, purification, and characterization of the
tobacco sulfonylurea **herbicide**-resistant recombinant
acetolactate synthase and its interaction with the triazolopyrimidine
herbicides

SO JOURNAL OF BIOCHEMISTRY AND MOLECULAR BIOLOGY, (31 MAY 1998) Vol. 31, No.
3, pp. 287-295.

Publisher: SPRINGER-VERLAG SINGAPORE PTE LTD, #04-01 CENCON I, 1 TANNERY
RD, SINGAPORE 347719, SINGAPORE.

ISSN: 1225-8687.

AU Kil M W; Chang S I (Reprint)

AN 1998:458646 SCISEARCH

L99 ANSWER 6 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Enhanced **glutathione S-transferase** activity
in velvetleaf biotypes possessing selected, triazine **herbicide**
resistance.

SO Book of Abstracts, 216th ACS National Meeting, Boston, August 23-27
(1998), AGRO-035 Publisher: American Chemical Society, Washington, D. C.
CODEN: 66KYA2

AU Balke, N. E.

AN 1998:524303 HCAPLUS

L99 ANSWER 7 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Analysis of a Rhizobium leguminosarum gene encoding a protein homologous
to **glutathione S-transferases**

SO MICROBIOLOGY-UK, (MAR 1997) Vol. 143, Part 3, pp. 813-822.

Publisher: SOC GENERAL MICROBIOLOGY, HARVEST HOUSE 62 LONDON ROAD,
READING, BERKS, ENGLAND RG1 5AS.

ISSN: 1350-0872.

AU Alkafaf N K T; Yeoman K H; Wexler M; Hussain H; Johnston A W B (Reprint)

AN 97:227484 SCISEARCH

L99 ANSWER 8 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Toxic effects of paraquat **herbicide** in albino mice

SO Al-Azhar Bulletin of Science (1997), 8(2), 691-704

CODEN: ABSCE7; ISSN: 1110-2535

AU Eweis, Essam. A.

AN 1998:726006 HCAPLUS
DN 130:106277

L99 ANSWER 9 OF 32 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on
STN
AN 1997147773 ESBIOBASE
TI Soluble overexpression in Escherichia coli, and purification and
characterization of wild-type recombinant tobacco acetolactate synthase
AU Chang S.-I.; Kang M.-K.; Choi J.-D.; Namgoong S.K.
CS S.-I. Chang, Department of Biochemistry, Chungbuk National University,
Cheongju 361-763, South Korea.
E-mail: sichang@cbucc.chungbuk.ac.kr
SO Biochemical and Biophysical Research Communications, (1997), 234/3
(549-553), 35 reference(s)
CODEN: BBRCOA ISSN: 0006-291X
DT Journal; Article
CY United States
LA English
SL English

L99 ANSWER 10 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN
TI Transgenic plant analysis as a tool for the study of maize
glutathione S-transferases
SO NATO ASI Series, Series 3: High Technology (1997), 37(Regulation of
Enzymatic Systems Detoxifying Xenobiotics in Plants), 313-323
CODEN: NAHTF4; ISSN: 1383-7168
AU Jepson, I.; Holt, D. C.; Roussel, V.; Wright, S. Y.; Greenland, A. J.
AN 1998:104058 HCAPLUS
DN 128:241898

L99 ANSWER 11 OF 32 MEDLINE on STN DUPLICATE 4
TI Peroxisome proliferators increase the formation of BPDE-DNA adducts in
isolated rat hepatocytes.
SO Toxicology, (1997 Sep 26) 122 (1-2) 81-91.
Journal code: 0361055. ISSN: 0300-483X.
AU Voskoboinik I; Ooi S G; Drew R; Ahokas J T
AN 97418728 MEDLINE

L99 ANSWER 12 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 5
TI Purification of multiple glutathione transferases involved in
herbicide detoxification from wheat (Triticum aestivum L.) treated
with the safener fenchlorazole-ethyl
SO PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY, (APR 1997) Vol. 59, No. 1, pp.
35-49.
Publisher: ACADEMIC PRESS INC JNL-COMP SUBSCRIPTIONS, 525 B ST, STE 1900,
SAN DIEGO, CA 92101-4495.
ISSN: 0048-3575.
AU Cummins I; Cole D J; Edwards R (Reprint)
AN 1998:297628 SCISEARCH

L99 ANSWER 13 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN
TI Kinetics study of **glutathione S-transferase**
Langmuir-Blodgett films
SO THIN SOLID FILMS, (15 SEP 1996) Vol. 285, pp. 854-858.
Publisher: ELSEVIER SCIENCE SA LAUSANNE, PO BOX 564, 1001 LAUSANNE 1,
SWITZERLAND.
ISSN: 0040-6090.
AU Paddeu S (Reprint); Erokhin V; Nicolini C
AN 96:901518 SCISEARCH

L99 ANSWER 14 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 6

TI ENZYME-MODIFIED PHYTOTOXIC STRUCTURE OF THIADIAZOLIDINE
 COMPOUNDS
 SO ZEITSCHRIFT FUR NATURFORSCHUNG C-A JOURNAL OF BIOSCIENCES, (JUL/AUG 1996)
 Vol. 51, No. 7-8, pp. 518-526.
 ISSN: 0939-5075.
 AU SENOO S; IIDA T; SHOUDA K; SATO Y; NICOLAUS B; BOGER P (Reprint);
 WAKABAYASHI K
 AN 96:665472 SCISEARCH

L99 ANSWER 15 OF 32 MEDLINE on STN DUPLICATE 7
 TI A naturally occurring point **mutation** confers broad range
 tolerance to **herbicides** that target acetolactate synthase.
 SO Journal of biological chemistry, (1995 Jul 21) 270 (29) 17381-5.
 Journal code: 2985121R. ISSN: 0021-9258.
 AU Bernasconi P; Woodworth A R; Rosen B A; Subramanian M V; Siehl D L
 AN 95340531 MEDLINE

L99 ANSWER 16 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
 on STN
 TI HEAT-STABLE LANGMUIR-BLODGETT-FILM OF **GLUTATHIONE-S-
 TRANSFERASE**
 SO LANGMUIR, (JUL 1995) Vol. 11, No. 7, pp. 2719-2725.
 ISSN: 0743-7463.
 AU ANTOLINI F; PADDEU S; NICOLINI C (Reprint)
 AN 95:518893 SCISEARCH

L99 ANSWER 17 OF 32 MEDLINE on STN
 TI Induction of hepatic drug-metabolizing enzymes by chlornitrofen (CNP) and
 CNP-amino in rats and mice.
 SO Chemosphere, (1995 Apr) 30 (7) 1297-309.
 Journal code: 0320657. ISSN: 0045-6535.
 AU Hanioka N; Nakano K; Jinno H; Hamamura M; Takahashi A; Yoda R; Nishimura
 T; Ando M
 AN 95268807 MEDLINE

L99 ANSWER 18 OF 32 LIFESCI COPYRIGHT 2005 CSA on STN DUPLICATE 8
 TI Sequence analysis of a gene cluster involved in metabolism of
 2,4,5-trichlorophenoxyacetic acid by Burkholderia cepacia AC1100
 SO APPL. ENVIRON. MICROBIOL., (1995) vol. 61, no. 4, pp. 1279-1289.
 ISSN: 0099-2240.
 AU Daubaras, D.L.; Hershberger, C.D.; Kitano, K.; Chakrabarty, A.M.*
 AN 95:75721 LIFESCI

L99 ANSWER 19 OF 32 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
 TI **Glutathione-S-transferase** activity and
 metabolism of glutathione conjugates by rhizosphere bacteria;
 glutathione-transferase activity detection on 1-chloro-2,4-
 dinitrobenzene substrate, for application in alachlor pesticide
 degradation
 SO Appl. Environ. Microbiol.; (1995) 61, 3, 1054-60
 CODEN: AEMIDF ISSN: 0099-2240
 AU Zablotowicz R M; Hoagland R E; Locke M A; Hickey W J
 AN 1995-06790 BIOTECHDS

L99 ANSWER 20 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
 on STN
 TI MOLECULAR ANALYSIS AND MAPPING OF 2 GENES ENCODING MAIZE
**GLUTATHIONE S-TRANSFERASES (GST-I
 AND GST-II)**
 SO MOLECULAR & GENERAL GENETICS, (20 SEP 1995) Vol. 248, No. 5, pp. 535-539.
 ISSN: 0026-8925.
 AU ROSSINI L (Reprint); PE M E; FROVA C; HEIN K; SARIGORLA M
 AN 95:713211 SCISEARCH

L99 ANSWER 21 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN
TI LANGMUIR-BLODGETT-FILM OF **GLUTATHIONE-S-TRANSFERASE** IMMOBILIZED ON SILANIZED SURFACES
SO THIN SOLID FILMS, (01 NOV 1995) Vol. 268, No. 1-2, pp. 108-113.
ISSN: 0040-6090.
AU PADDEU S; ANTOLINI F; DUBROVSKY T; NICOLINI C (Reprint)
AN 96:36803 SCISEARCH

L99 ANSWER 22 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN
TI WEEDY ADAPTATION IN SETARIA SPP .3. VARIATION IN **HERBICIDE**
RESISTANCE IN SETARIA SPP
SO PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY, (FEB 1995) Vol. 51, No. 2, pp.
99-116.
ISSN: 0048-3575.
AU WANG R L (Reprint); DEKKER J
AN 95:284014 SCISEARCH

L99 ANSWER 23 OF 32 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN
TI Effect of ethanol on paraquat toxicity in F344 rats.
SO Food and Chemical Toxicology, (1994) Vol. 32, No. 4, pp. 379-386.
CODEN: FCTOD7. ISSN: 0278-6915.
AU Puapairoj, P.; Cui, L.; Ogawa, K.; Akagi, K.; Hasegawa, R.; Ito, N.
[Reprint author]
AN 1994:322937 BIOSIS

L99 ANSWER 24 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN
TI GROWTH AND PHYSIOLOGICAL-RESPONSES OF SORGHUM CULTIVARS EXPOSED TO EXCESS
H+ AND THE **HERBICIDE** METOLACHLOR
SO CANADIAN JOURNAL OF BOTANY-REVUE CANADIENNE DE BOTANIQUE, (APR 1993) Vol.
71, No. 4, pp. 533-540.
ISSN: 0008-4026.
AU WILKINSON R E (Reprint); DUNCAN R R; MEREDITH S A; HATZIOS K K
AN 93:429999 SCISEARCH

L99 ANSWER 25 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN
TI DIALATE, TRIALLATE, AND SULFALLATE **HERBICIDES** - IDENTIFICATION
OF THIOCARBAMATE SULFOXIDES, CHLOROACROLEINS, AND CHLOROALLYLTHIOLS AS
MOUSE MICROSOMAL OXIDASE AND **GLUTATHIONE-S-TRANSFERASE** METABOLITES
SO JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (1991) Vol. 39, No. 8, pp.
1504-1508.
AU MAIR P; CASIDA J E (Reprint)
AN 91:479440 SCISEARCH

L99 ANSWER 26 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN
TI Effect of β -naphthoflavone and MCPA on liver and kidney
drug-metabolizing enzymes from the carp, *Cyprinus carpio*
SO Ecotoxicology and Environmental Safety (1990), 19(3), 276-84
CODEN: EESADV; ISSN: 0147-6513
AU Riviere, J. L.; Devaux, A.; Gonin, O.; Monod, G.
AN 1990:472768 HCAPLUS
DN 113:72768

L99 ANSWER 27 OF 32 MEDLINE on STN
TI Total chemical synthesis and expression in *Escherichia coli* of a maize
glutathione-transferase (**GST**) gene.
SO Gene, (1989 Mar 15) 76 (1) 153-60.
Journal code: 7706761. ISSN: 0378-1119.
AU Wosnick M A; Barnett R W; Carlson J E

AN 89306650 MEDLINE

L99 ANSWER 28 OF 32 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
TI Total chemical synthesis and expression of a maize glutathione-
transferase (GST) gene;
for expression of **herbicide** tolerance in transgenic plant
(conference abstract)

SO Genome; (1988) 30, Suppl.1, 486
CODEN: GENOE3

AU Wosnick M A; Barnett R W; Carlson J E

AN 1989-04000 BIOTECHDS

L99 ANSWER 29 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

TI **Glutathione S-transferase** gene cloning and
its use in preparation of **herbicide**-tolerant plants

SO Jpn. Kokai Tokkyo Koho, 34 pp.

CODEN: JKXXAF

AN 1988:449623 HCAPLUS

DN 109:49623

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62296882	A2	19871224	JP 1987-120327	19870519
	JP 2511036	B2	19960626		
	CH 689454	A	19990430	CH 1987-1874	19870515
	DK 8702506	A	19871120	DK 1987-2506	19870518
	FI 8702178	A	19871120	FI 1987-2178	19870518
	NO 8702075	A	19871120	NO 1987-2075	19870518
	AU 8773146	A1	19871126	AU 1987-73146	19870518
	AU 610825	B2	19910530		
	ZA 8703538	A	19880127	ZA 1987-3538	19870518
	HU 44075	A2	19880128	HU 1987-2208	19870518
	HU 210505	B	19950428		
	EP 256223	A1	19880224	EP 1987-107137	19870518
	R: AT, BE, DE, ES, FR, GB, GR, IT, LU, NL, SE				
	DD 273855	A5	19891129	DD 1987-302873	19870518
	DD 279269	A5	19900530	DD 1987-326337	19870518
	IL 82557	A1	19930221	IL 1987-82557	19870518
	BR 8702542	A	19880223	BR 1987-2542	19870519
	CN 87104489	A	19880504	CN 1987-104489	19870519
	CN 1024021	B	19940316		
	CA 1339629	A1	19980113	CA 1987-537339	19870519
	US 5073677	A	19911217	US 1989-391632	19890804

L99 ANSWER 30 OF 32 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

TI **Herbicide** tolerant plants - obtd. by recombinant DNA methods,
and comprise genetic sequence coding for **glutathione S**
-transferase gene.

PI	AU 8773146	A	19871126 (198803)*	75	
	NO 8702075	A	19871214 (198804)		
	JP 62296882	A	19871224 (198806)		
	DK 8702506	A	19871120 (198808)		
	EP 256223	A	19880224 (198808)	GE	
	R: AT BE DE ES FR GB GR IT LU NL SE				
	ZA 8703538	A	19871119 (198809)		
	FI 8702178	A	19871120 (198810)		
	HU 44075	T	19880128 (198810)		
	BR 8702542	A	19880223 (198813)		
	PT 84888	A	19880527 (198826)		
	CN 87104489	A	19880504 (198924)		
	DD 273855	A	19891129 (199019)		
	DD 279269	A	19900530 (199044)		
	IL 82557	A	19930221 (199314)		C12N015-54
	HU 210505	B	19950428 (199523)		C12N015-05
	CN 1024021	C	19940316 (199525)		C12N015-54

JP 2511036 B2 19960626 (199630) 32 C12N015-09
 CA 1339629 C 19980113 (199816) C12N005-10
 CH 689454 A5 19990430 (199922) C12N015-63

IN CHILTON, M D; DUESING, J; HELMER, G; LAI, H C J; ROTHSTEIN, S; SCARAFIA,
 L; TU, C P D; CHILTON, M; LAI, H J; TU, C D; HERMER, J; LAI, H; TU, C

L99 ANSWER 31 OF 32 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN DUPLICATE 13

TI EFFECTS OF S ETHYL-N N-DIPROPYLTHIOCARBAMATE EPTC ON NORMAL AND DWARF
 SEEDLINGS OF ZEA-MAYS L.

SO Biochemie und Physiologie der Pflanzen (BPP), (1987) Vol. 182, No. 3, pp.
 257-260.
 CODEN: BPPFA4. ISSN: 0015-3796.

AU KOMIVES T [Reprint author]; HULESCH A; KOMIVES A V; DUTKA F

AN 1987:424997 BIOSIS

L99 ANSWER 32 OF 32 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
 STN DUPLICATE 14

TI IMMUNOFLUORESCENCE LOCALIZATION OF CONJUGATED ATRAZINE IN LEAF PIECES OF
 CORN ZEA-MAYS.

SO Zeitschrift fuer Pflanzenkrankheiten und Pflanzenschutz, (1986) Vol. 93,
 No. 6, pp. 608-613.
 CODEN: ZPPFAA. ISSN: 0340-8159.

AU HUBER S J [Reprint author]; SAUTTER C

AN 1987:193347 BIOSIS

=>
 => d ab 6,12

L99 ANSWER 6 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB Selected resistance to triazine **herbicides** has occurred in over
 50 weed species world wide. The basis of this resistance is almost always
 a **mutation(s)** in the gene encoding the binding site of triazines
 in Photosystem II (D1 protein) of the photosynthetic electron transport
 chain. However, velvetleaf (Abutilon theophrasti Medic.) biotypes from
 one location in Maryland (MRB) and at least two locations in Wisconsin
 (WRB1, WRA1) are resistant to atrazine due to enhanced detoxification of
 the **herbicide**, rather than decreased binding to D1 protein.
 Compared to seedlings of a Wisconsin atrazine-susceptible biotype (WSA1),
 seedlings of MRB and WRB1 exposed hydroponically to 14C-atrazine
 metabolized the **herbicide** more rapidly to the glutathione
 conjugate of atrazine (GS-atrazine) and its further catabolites. In
 vitro, GSTatr's isolated from stems and leaves of the resistant biotypes
 had higher activity than those from the susceptible biotype. Thus,
 elevated rates of atrazine detoxification catalyzed by a GSTatr
 isoenzyme(s) appear to be responsible for triazine resistance in the
 velvetleaf biotypes. The mol. mechanism of the resistance is under
 investigation.

L99 ANSWER 12 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
 on STN DUPLICATE 5

AB Multiple isoenzymes of glutathione transferase (**GST**),
 purified from the shoots of wheat seedlings treated with the
herbicide safener fenchlorazole-ethyl, could be resolved into
 polar and hydrophobic types using hydrophobic interaction chromatography.
 Both types of GSTs could also be resolved based on their affinities for
 S-hexyl-glutathione-agarose. A minor proportion of the GSTs could be
 eluted from the column with a salt wash and this loosely bound fraction
 contained polypeptides which were recognized by an antiserum raised
 against the theta-type maize **GST** ZmGST I-II. The major
 proportion could only be recovered using S-hexyl-glutathione and these
 GSTs were characterized in detail. These isoenzymes catalyzed the
 glutathione conjugation of xenobiotics, including **herbicides**,

and showed additional activities as glutathione peroxidases. Each **GST** was composed of two subunits, with four distinct classes of subunit being determined. A 25-kDa polypeptide, termed *Triticum aestivum* **GST 1** (TaGST 1), was the most abundant subunit and could be resolved into two **variants**, TaGST 1a and TaGST 1b by reversed-phase HPLC. This **GST** subunit was recognised by an antiserum raised against the maize **GST** ZmGST V-VI, which is a tau-type **GST**. In addition to TaGST 1, two 26-kDa polypeptides, TaGST 2 and TaGST 3, and a 24-kDa polypeptide, TaGST 4, could be resolved by a combination of hydrophobic interaction chromatography, SDS-PAGE, and reversed-phase HPLC. In the shoots of untreated wheat seedlings the major isoenzyme was TaGST 1a-1b, while in the shoots of fenchlorazole-ethyl-treated plants the heterodimers TaGST 1-2, TaGST 1-3, and TaGST 1-4 also accumulated. Significantly, only the safener-inducible TaGST 1-2, TaGST 1-3, and TaGST 1-4 isoenzymes catalyzed the detoxification of fenoxaprop-ethyl and this may help to explain why fenchlorazole-ethyl enhances the glutathione-mediated metabolism and also the tolerance of wheat toward this **herbicide**. All isoenzymes were active in detoxifying the **herbicides** metolachlor and fluorodifen, but only TaGST 1-2 and TaGST 1-3 showed any activity toward atrazine. (C) 1997 Academic Press.

=> d ab 19,22,30

L99 ANSWER 19 OF 32 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
 AB Glutathione-transferase (**GST**, EC-2.5.1.18) activity was determined in rhizosphere bacteria with the substrate 1-chloro-2,4-dinitrobenzene (CDNB) and in 18 strains with the **herbicide** alachlor. Initial alachlor-**GST** activity was assessed with (U-ring-14C)alachlor in a phase partitioning assay **modified** from an atrazine-**GST** assay with hexane in place of methylene chloride and at a final alachlor concentration of 550 μ l. Highest CDBN-**GST** activity (60-222 nmol/hr.mg) were in *Enterobacter cloacae*, *Citrobacter diversus*, *Klebsiella planticola*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Pseudomonas putida* and *Xanthomonas campestris*. There was very low CDBN-**GST** activity in Gram-positive strains. Alachlor-**GST** activity detected in cell extracts and whole-cell suspensions of some strains of *Enterobacteriaceae* and *Pseudomonaceae* was 50- to 100-fold lower than CDBN-**GST** activity (0.5-2.5 nmol/hr.mg). Therefore, rhizosphere bacteria, especially fluorescent pseudomonads, may play an important role in alachlor pesticide degradation via **GST**-mediated reactions. (34 ref)

L99 ANSWER 22 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
 on STN DUPLICATE 9
 AB *Setaria* is a grass genus of about 125 species that includes both food crops and a number of important agricultural weeds. *Setaria viridis*, *S. faberii*, *S. glauca*, and *S. geniculata* are major agricultural weeds worldwide and in North America. There is currently an inadequate knowledge of inter- and intraspecific **herbicide**-resistance variation in these foxtail species despite the importance of this knowledge to understanding evolution of **herbicide** resistance and improving weed management. Previous isozyme analyses of these species indicate that significant variation in genetic diversity exists among foxtail populations. It is unknown whether this genetic diversity is correlated with variability in important adaptive traits such as **herbicide** resistance. Studies were conducted to determine if inter- and intraspecific differences in atrazine and metolachlor resistance exist in foxtail species. Three assays were utilized to make these determinations: whole plant dose response, in vivo leaf chlorophyll fluorescence, and **glutathione S-transferase (GST)** conjugation assays. Significant variations in atrazine and metolachlor

resistance were revealed within and among foxtail species. Green and giant foxtail were more resistant to atrazine than was yellow foxtail. Although green and giant foxtail again had a similar level of resistance, yellow foxtail was the most resistant species to metolachlor. These results indicated that the resistance mechanisms (quantitative or qualitative) to these two **herbicides** may be different in yellow, green, and giant foxtail. Intraspecific differences in atrazine resistance were found within both green foxtail populations and with yellow foxtail populations. Intraspecific metolachlor resistance differences were detected among green foxtail populations, but not in other foxtail species. No evidence for population shifts to more resistant foxtail **variants** with prolonged atrazine exposure was found in several detailed studies. When populations from several farms with a long history of atrazine use were compared, no differences in atrazine resistance were detected among populations from treated areas and adjacent untreated areas. Chlorophyll fluorescence assays indicated a similar pattern of atrazine resistant among foxtail populations, although it was less sensitive in detecting differences than the whole plant assay. No differences in **GST**-mediated atrazine or metolachlor conjugation were detected within or between foxtail species. These results may indicate that **GST**-mediated glutathione-**herbicide** conjugation may not be the primary detoxification mechanism for these **herbicides** in these foxtail species. Alternatively, these results may be a reflection of mitigating factors, such as differences at the target site, or in fitness related to growth rate at critical growth stages, among the populations. Several foxtail species had significant inter- and intraspecific differences in **GST**-mediated 1-chloro-2,4-dinitrobenzene conjugation activity. In some instances these responses were similar to those observed in the whole plant responses to metolachlor, although the significance of these similarities was not clear. (C) 1995 Academic Press, Inc.

L99 ANSWER 30 OF 32 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
 AB AU 8773146 A UPAB: 19990316

Recombinant DNA molecule conferring **herbicide** tolerance to plants by detoxifying the **herbicides** is new.

Recombinant DNA molecule comprising a genetic sequence coding for a **glutathione S-transferase (GST)** polypeptide is new. It may be linked to a plant promoter.

DNA transfer or expression vector comprising a recombinant DNA molecule as defined above is new.

Host cell comprising a DNA transfer or expression vector as defined above is new. The host cell is especially a plant or its seed.

Progeny of plants regenerated from the host cell plant, including **mutants** and **variant** progeny, are new.

USE/ADVANTAGE - The recombinant DNA molecule including a **GST** gene on expression in a plant increases the levels of **GST** enzymatic activity. **GST** is involved in the detoxification of xenobiotics. In plants it provided a mechanism for detoxification of the xenobiotic cpd., so that it becomes water-soluble and non-toxic. Plants tolerant to **herbicides** can be developed in this way.

Dwg.0/4

=> s 112 and (soy or glycine max)
 FILE 'MEDLINE'

6277 SOY
 41966 GLYCINE
 17701 MAX
 1254 GLYCINE MAX
 (GLYCINE(W)MAX)

L100 19 L1 AND (SOY OR GLYCINE MAX)

FILE 'SCISEARCH'

9749 SOY
40444 GLYCINE
62656 MAX
8501 GLYCINE MAX
(GLYCINE(W)MAX)

L101 41 L2 AND (SOY OR GLYCINE MAX)

FILE 'LIFESCI'

1844 SOY
16196 "GLYCINE"
16966 "MAX"
5268 GLYCINE MAX
("GLYCINE" (W) "MAX")

L102 13 L3 AND (SOY OR GLYCINE MAX)

FILE 'BIOTECHDS'

887 SOY
5950 GLYCINE
3471 MAX
2975 GLYCINE MAX
(GLYCINE(W)MAX)

L103 10 L4 AND (SOY OR GLYCINE MAX)

FILE 'BIOSIS'

14748 SOY
65766 GLYCINE
42542 MAX
20380 GLYCINE MAX
(GLYCINE(W)MAX)

L104 50 L5 AND (SOY OR GLYCINE MAX)

FILE 'EMBASE'

4477 SOY
38412 "GLYCINE"
51887 "MAX"
884 GLYCINE MAX
("GLYCINE" (W) "MAX")

L105 15 L6 AND (SOY OR GLYCINE MAX)

FILE 'HCAPLUS'

18531 SOY
138391 GLYCINE
808019 MAX
19022 GLYCINE MAX
(GLYCINE(W)MAX)

L106 80 L7 AND (SOY OR GLYCINE MAX)

FILE 'NTIS'

228 SOY
695 GLYCINE
2503 MAX
79 GLYCINE MAX
(GLYCINE(W)MAX)

L107 0 L8 AND (SOY OR GLYCINE MAX)

FILE 'ESBIOBASE'

2561 SOY
15263 GLYCINE
16395 MAX
3745 GLYCINE MAX
(GLYCINE(W)MAX)

L108 29 L9 AND (SOY OR GLYCINE MAX)

FILE 'BIOTECHNO'
1310 SOY
13489 GLYCINE
11604 MAX
1563 GLYCINE MAX
(GLYCINE(W)MAX)
L109 14 L10 AND (SOY OR GLYCINE MAX)

FILE 'WPIDS'
16090 SOY
11275 GLYCINE
96298 MAX
349 GLYCINE MAX
(GLYCINE(W)MAX)
L110 9 L11 AND (SOY OR GLYCINE MAX)

TOTAL FOR ALL FILES
L111 280 L12 AND (SOY OR GLYCINE MAX)

=> s l111 not 2000-2005/py
FILE 'MEDLINE'
2727691 2000-2005/PY
L112 6 L100 NOT 2000-2005/PY

FILE 'SCISEARCH'
5097493 2000-2005/PY
L113 20 L101 NOT 2000-2005/PY

FILE 'LIFESCI'
512467 2000-2005/PY
L114 7 L102 NOT 2000-2005/PY

FILE 'BIOTECHDS'
105642 2000-2005/PY
L115 3 L103 NOT 2000-2005/PY

FILE 'BIOSIS'
2625073 2000-2005/PY
L116 25 L104 NOT 2000-2005/PY

FILE 'EMBASE'
2367945 2000-2005/PY
L117 4 L105 NOT 2000-2005/PY

FILE 'HCAPLUS'
5123281 2000-2005/PY
L118 28 L106 NOT 2000-2005/PY

FILE 'NTIS'
80220 2000-2005/PY
L119 0 L107 NOT 2000-2005/PY

FILE 'ESBIOBASE'
1468247 2000-2005/PY
L120 14 L108 NOT 2000-2005/PY

FILE 'BIOTECHNO'
491187 2000-2005/PY
L121 10 L109 NOT 2000-2005/PY

FILE 'WPIDS'
4509723 2000-2005/PY
L122 1 L110 NOT 2000-2005/PY

TOTAL FOR ALL FILES

L123 118 L111 NOT 2000-2005/PY

=> dup rem l123

PROCESSING COMPLETED FOR L123

L124 43 DUP REM L123 (75 DUPLICATES REMOVED)

=> d tot

L124 ANSWER 1 OF 43 MEDLINE on STN DUPLICATE 1

TI Soy induces phase II enzymes but does not inhibit
dimethylbenz[a]anthracene-induced carcinogenesis in female rats.

SO Journal of nutrition, (1999 Oct) 129 (10) 1820-6.

Journal code: 0404243. ISSN: 0022-3166.

AU Appelt L C; Reicks M M

AN 1999429911 MEDLINE

L124 ANSWER 2 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN DUPLICATE 2

TI Early events in the signal pathway for the oxidative burst in soybean
cells exposed to avirulent Pseudomonas syringae pv glycinea

SO PLANT PHYSIOLOGY, (AUG 1999) Vol. 120, No. 4, pp. 1137-1146.

Publisher: AMER SOC PLANT PHYSIOLOGISTS, 15501 MONONA DRIVE, ROCKVILLE, MD
20855.

ISSN: 0032-0889.

AU Rajasekhar V K (Reprint); Lamb C; Dixon R A

AN 1999:653627 SCISEARCH

L124 ANSWER 3 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN DUPLICATE 3

TI Differential gene expression in plants stressed by the peroxidizing
herbicide oxyfluorfen

SO ZEITSCHRIFT FUR NATURFORSCHUNG C-A JOURNAL OF BIOSCIENCES, (SEP-OCT 1999)
Vol. 54, No. 9-10, pp. 764-770.

Publisher: VERLAG Z NATURFORSCH, POSTFACH 2645, W-7400 TUBINGEN, GERMANY.
ISSN: 0939-5075.

AU Lederer B; Knorzer O C; Boger P (Reprint)

AN 1999:804786 SCISEARCH

L124 ANSWER 4 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI The involvement of cysteine proteases and protease inhibitor genes in the
regulation of programmed cell death in plants

SO Plant Cell (1999), 11(3), 431-443

CODEN: PLCEEW; ISSN: 1040-4651

AU Solomon, Mazal; Belenghi, Beatrice; Delledonne, Massimo; Menachem, Ester;
Levine, Alex

AN 1999:233219 HCAPLUS

DN 131:29895

L124 ANSWER 5 OF 43 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 4

TI Two soybean glutathione transferases exhibit substrate and thiol
specificity.

SO Clinical Chemistry and Enzymology Communications, (1999) 8/4-6 (389-392).
Refs: 3

ISSN: 0892-2187 CODEN: CCECEY

AU Skipsey M.; Andrews C.J.; Townson J.K.; Jepson I.; Edwards R.

AN 2000126082 EMBASE

L124 ANSWER 6 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on
STN DUPLICATE 5

TI Antioxidative defense activation in soybean cells

SO PHYSIOLOGIA PLANTARUM, (NOV 1999) Vol. 107, No. 3, pp. 294-302.

Publisher: MUNKSGAARD INT PUBL LTD, 35 NORRE SOGADE, PO BOX 2148, DK-1016

COPENHAGEN, DENMARK.

ISSN: 0031-9317.

AU Knorzer O C; Lederer B; Durner J; Boger P (Reprint)

AN 2000:72524 SCISEARCH

L124 ANSWER 7 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Expression of a novel ethylene-producing bifunctional fusion enzyme in yeast

SO Botanical Bulletin of Academia Sinica (1999), 40(2), 107-114

CODEN: BBASA6; ISSN: 0006-8063

AU Lu, Bing Wen; Yu, Bing; Li, Ning

AN 1999:336512 HCAPLUS

DN 131:154150

L124 ANSWER 8 OF 43 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

TI Heterologous expression systems to study **glutathione-S-transferases** involved in herbicide metabolism; glutathione-transferase expression in transgenic plant, bacterium and application in herbicide pesticide degradation. (conference abstract)

SO Abstr.Pap.Am.Chem.Soc.; (1999) 218 Meet., Pt.1, AGRO176

CODEN: ACSRAL ISSN: 0065-7727

218th ACS National Meeting, American Chemical Society, New Orleans, LA, USA, 22-26 August, 1999.

AU Andrews C J; Jepson I; Skipsey M; Townson J K; Edwards R

AN 2000-02087 BIOTECHDS

L124 ANSWER 9 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6

TI Processed soybean foods

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

IN Kanke, Yusuke; Iwama, Akihiko; Iwasaki, Masae; Kaneko, Senri

AN 1998:586018 HCAPLUS

DN 129:202278

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI JP 10234326

A2

19980908

JP 1997-41788

19970226

L124 ANSWER 10 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN DUPLICATE 7

TI Potentiation of the oxidative burst and isoflavonoid phytoalexin accumulation by serine protease inhibitors

SO PLANT PHYSIOLOGY, (DEC 1998) Vol. 118, No. 4, pp. 1487-1494.

Publisher: AMER SOC PLANT PHYSIOLOGISTS, 15501 MONONA DRIVE, ROCKVILLE, MD 20855.

ISSN: 0032-0889.

AU Guo Z J; Lamb C; Dixon R A (Reprint)

AN 1998:950928 SCISEARCH

L124 ANSWER 11 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN

TI Efficacy of exogenous GA(3) and herbicide safeners in protection of Zea mays from metolachlor toxicity

SO PLANT PHYSIOLOGY AND BIOCHEMISTRY, (NOV 1998) Vol. 36, No. 11, pp. 809-815.

Publisher: GAUTHIER-VILLARS/EDITIONS ELSEVIER, 23 RUE LINOIS, 75015 PARIS, FRANCE.

ISSN: 0981-9428.

AU Alla M M N (Reprint); Hassan N M

AN 1998:931846 SCISEARCH

L124 ANSWER 12 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Effect of diet and β -naphthoflavone on hepatic and renal **glutathione S-transferase** isoenzymes in carp (Cyprinus carpio)

SO Fish Physiology and Biochemistry (1998), 18(2), 203-212
CODEN: FPBIEP; ISSN: 0920-1742
AU Noble, E.; Barre, H.; Dierickx, P. J.
AN 1999:303163 HCAPLUS
DN 131:73033

L124 ANSWER 13 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 8

TI H2O2 generation and the influence of antioxidants during the
2,3,5-triiodobenzoic acid-mediated induction of **glutathione**
S-transferase in soybean

SO PHYTOCHEMISTRY, (SEP 1998) Vol. 49, No. 1, pp. 37-41.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE,
KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0031-9422.

AU Flury T (Reprint); Kreuz K; Wagner E
AN 1998:706716 SCISEARCH

L124 ANSWER 14 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 9

TI Homoglutathione selectivity by soybean **glutathione S-**
transferases

SO PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY, (OCT 1998) Vol. 62, No. 1, pp.
15-25.
Publisher: ACADEMIC PRESS INC JNL-COMP SUBSCRIPTIONS, 525 B ST, STE 1900,
SAN DIEGO, CA 92101-4495.
ISSN: 0048-3575.

AU McGonigle B (Reprint); Lau S M C; Jennings L D; OKeefe D P
AN 1998:836014 SCISEARCH

L124 ANSWER 15 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Method for controlling seed germination using soybean acyl CoA oxidase
gene sequences

SO PCT Int. Appl., 90 pp.
CODEN: PIXXD2

IN Agarwal, Ametta Kishore; Brown, Sherri Marie; Qi, Youlin
AN 1997:776268 HCAPLUS
DN 128:58322

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
PI WO 9744465	A1	19971127	WO 1997-US8732	19970520
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9731394	A1	19971209	AU 1997-31394	19970520

L124 ANSWER 16 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Changes in glutathione transferase activities in soybean in response to
treatment with herbicides and safeners

SO Brighton Crop Protection Conference--Weeds (1997), (Vol. 2), 825-830
CODEN: BCPWE2; ISSN: 0955-1514

AU Andrews, C.; Skipsey, M.; Edwards, R.; Hall, G.; Townson, J.; Jepson, I.
AN 1998:35885 HCAPLUS
DN 128:98922

L124 ANSWER 17 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Purification and characterization of glutathione transferase enzymes from
soybean seedlings

SO Brighton Crop Protection Conference--Weeds (1997), (Vol. 2), 789-794

CODEN: BCPWE2; ISSN: 0955-1514

AU Skipsey, M.; Andrews, C. J.; Edwards, R.; Townson, J. K.; Jepson, I.
AN 1998:35867 HCAPLUS
DN 128:164220

L124 ANSWER 18 OF 43 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Effect of **soy** on phase II enzymes and lipid peroxidation in
premenopausal women.

SO FASEB Journal, (1997) Vol. 11, No. 3, pp. A601.
Meeting Info.: Annual Meeting of the Professional Research Scientists on
Experimental Biology 97. New Orleans, Louisiana, USA. April 6-9, 1997.
CODEN: FAJOEC. ISSN: 0892-6638.

AU Appelt, L. C.; Csallany, A. S.; Kurzer, M. S.; Duncan, A.; Merz, B.;
Reicks, M.

AN 1997:187161 BIOSIS

L124 ANSWER 19 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 10

TI Substrate and thiol specificity of a stress-inducible glutathione
transferase from soybean

SO FEBS LETTERS, (16 JUN 1997) Vol. 409, No. 3, pp. 370-374.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM,
NETHERLANDS.
ISSN: 0014-5793.

AU Skipsey M; Andrews C J; Townson J K; Jepson I; Edwards R (Reprint)

AN 97:547436 SCISEARCH

L124 ANSWER 20 OF 43 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI **Soy** isoflavones, genistein and daidzein, do not inhibit
fumonisin B-1-promoted rat hepatocarcinogenesis.

SO FASEB Journal, (1997) Vol. 11, No. 3, pp. A368.
Meeting Info.: Annual Meeting of the Professional Research Scientists on
Experimental Biology 97. New Orleans, Louisiana, USA. April 6-9, 1997.
CODEN: FAJOEC. ISSN: 0892-6638.

AU Hendrich, S.; Lu, Z.; Dantzer, W.; Song, T.; Murphy, P.

AN 1997:185819 BIOSIS

L124 ANSWER 21 OF 43 MEDLINE on STN DUPLICATE 11

TI **Soy** feeding induces phase II enzymes in rat tissues.

SO Nutrition and cancer, (1997) 28 (3) 270-5.
Journal code: 7905040. ISSN: 0163-5581.

AU Appelt L C; Reicks M M

AN 1998003764 MEDLINE

L124 ANSWER 22 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 12

TI Glutathione transferase activities toward herbicides used selectively in
soybean

SO PESTICIDE SCIENCE, (OCT 1997) Vol. 51, No. 2, pp. 213-222.
Publisher: JOHN WILEY & SONS LTD, BAFFINS LANE CHICHESTER, W SUSSEX,
ENGLAND PO19 1UD.
ISSN: 0031-613X.

AU Andrews C J; Skipsey M; Townson J K; Morris C; Jepson I; Edwards R
(Reprint)

AN 97:795169 SCISEARCH

L124 ANSWER 23 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

TI Food seed aspartic proteinase. Cloning, expression, and application to
food processing

SO Daizu Tanpakushitsu Kenkyukai Kaishi (1997), 18, 15-20
CODEN: DTKKEE; ISSN: 0919-9535

AU Abe, Keiko; Asakura, Tomiko

AN 1998:116735 HCAPLUS
DN 128:179594

L124 ANSWER 24 OF 43 MEDLINE on STN DUPLICATE 13
TI Differential expression of soybean cysteine proteinase inhibitor genes during development and in response to wounding and methyl jasmonate.
SO Plant physiology, (1996 Nov) 112 (3) 1201-10.
Journal code: 0401224. ISSN: 0032-0889.
AU Botella M A; Xu Y; Prabha T N; Zhao Y; Narasimhan M L; Wilson K A; Nielsen S S; Bressan R A; Hasegawa P M
AN 97092856 MEDLINE

L124 ANSWER 25 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN DUPLICATE 14
TI An inducible **glutathione S-transferase** in soybean hypocotyl is localized in the apoplast
SO PLANT PHYSIOLOGY, (NOV 1996) Vol. 112, No. 3, pp. 1185-1190.
Publisher: AMER SOC PLANT PHYSIOLOGISTS, 15501 MONONA DRIVE, ROCKVILLE, MD 20855.
ISSN: 0032-0889.
AU Flury T; Wagner E; Kreuz K (Reprint)
AN 96:868231 SCISEARCH

L124 ANSWER 26 OF 43 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
TI Function of the oxidative burst in hypersensitive disease resistance.
SO Proceedings of the National Academy of Sciences of the United States of America, (1995) Vol. 92, No. 10, pp. 4158-4163.
CODEN: PNASA6. ISSN: 0027-8424.
AU Tenhaken, Raimund; Levine, Alex; Brisson, Louise F.; Dixon, Richard A.; Lamb, Chris [Reprint author]
AN 1995:272737 BIOSIS

L124 ANSWER 27 OF 43 MEDLINE on STN DUPLICATE 15
TI The soybean GH2/4 gene that encodes a **glutathione S-transferase** has a promoter that is activated by a wide range of chemical agents.
SO Plant physiology, (1995 Jul) 108 (3) 919-27.
Journal code: 0401224. ISSN: 0032-0889.
AU Ulmasov T; Ohmiya A; Hagen G; Guilfoyle T
AN 95357443 MEDLINE

L124 ANSWER 28 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN DUPLICATE 16
TI A 2,4-D-INDUCIBLE **GLUTATHIONE-S-TRANSFERASE** FROM SOYBEAN (**GLYCINE-MAX**) - PURIFICATION, CHARACTERIZATION AND INDUCTION
SO PHYSIOLOGIA PLANTARUM, (JUN 1995) Vol. 94, No. 2, pp. 312-318.
ISSN: 0031-9317.
AU FLURY T; ADAM D; KREUZ K (Reprint)
AN 95:421137 SCISEARCH

L124 ANSWER 29 OF 43 LIFESCI COPYRIGHT 2005 CSA on STN
TI The ocs element in the soybean GH2/4 promoter is activated by both active and inactive auxin and salicylic acid analogues.
SO PLANT MOL. BIOL., (1994) vol. 26, no. 4, pp. 1055-1064.
ISSN: 0167-4412.
AU Ulmasov, T.; Hagen, G.; Guilfoyle, T.*
AN 95:58509 LIFESCI

L124 ANSWER 30 OF 43 LIFESCI COPYRIGHT 2005 CSA on STN DUPLICATE 17
TI H sub(2)O sub(2) from the oxidative burst orchestrates the plant hypersensitive disease resistance response
SO CELL, (1994) vol. 79, no. 4, pp. 583-593.

ISSN: 0092-8674.

AU Levine, A.; Tenhaken, R.; Dixon, R.; Lamb, C.
AN 95:20295 LIFESCI

L124 ANSWER 31 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN

TI THE PHYTOTOXIC EFFECTS OF AFLATOXIN B-1 - A REVIEW (1984-1994)
SO SOUTH AFRICAN JOURNAL OF SCIENCE, (JUL 1994) Vol. 90, No. 7, pp. 385-390.
ISSN: 0038-2353.

AU MCLEAN M (Reprint)
AN 94:599897 SCISEARCH

L124 ANSWER 32 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN

TI HIGHER-PLANT METABOLISM OF XENOBIOTICS - THE GREEN LIVER CONCEPT
SO PHARMACOGENETICS, (OCT 1994) Vol. 4, No. 5, pp. 225-241.
ISSN: 0960-314X.

AU SANDERMANN H (Reprint)
AN 94:725444 SCISEARCH

L124 ANSWER 33 OF 43 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN

TI Proteins encoded by an auxin-regulated gene family of tobacco share
limited but significant homology with **glutathione S-**
transferases and one member indeed shows in vitro **GST**
activity.

SO Plant Molecular Biology, (1993) Vol. 21, No. 6, pp. 965-972.
CODEN: PMBIDB. ISSN: 0167-4412.

AU Droog, F. N. J.; Hooykaas, P. J. J.; Libbenga, K. R.; Van Der Zaal, E. J.
AN 1993:365911 BIOSIS

L124 ANSWER 34 OF 43 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

TI **Glutathione-S-transferase** promoter;
and DNA cassette for seed storage protein, lectin or transcriptional
activator expression in a transgenic plant

AN 1993-01541 BIOTECHDS
PI EP 515048 25 Nov 1992

L124 ANSWER 35 OF 43 LIFESCI COPYRIGHT 2005 CSA on STN

TI Azaserine-induced pancreatic foci: Detection, growth, labelling index and
response to raw soya flour.

SO CARCINOGENESIS., (1992) vol. 13, no. 9, pp. 1519-1523.

AU Daly, J.M.; Morgan, R.G.H.; Oates, P.S.; Yeoh, G.C.T.; Tee, L.B.G.
AN 93:105059 LIFESCI

L124 ANSWER 36 OF 43 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

TI Benastatins A and B, new inhibitors of **glutathione S-**
transferase, produced by *Streptomyces* sp. MI384-DF12. I.
Taxonomy, production, isolation, physico-chemical properties and
biological activities;
glutathione-transferase-inhibitor benastatin-A and benastatin-B
purification and characterization

SO J.Antibiot.; (1992) 45, 9, 1385-90
CODEN: JANTAJ

AU Aoyagi T; Aoyama T; Kojima F; Matsuda N; Maruyama M; Hamada M
AN 1992-13000 BIOTECHDS

L124 ANSWER 37 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 18

TI METOLACHLOR IN CORN (ZEA-MAYS) AND SOYBEAN (**GLYCINE-MAX**
) - PERSISTENCE AND BIOCHEMICAL SIGNS OF STRESS DURING ITS DETOXIFICATION
SO JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (MAY 1992) Vol. 40, No. 5, pp.
884-889.
ISSN: 0021-8561.

AU SCARPONI L (Reprint); ALLA M N; MARTINETTI L
AN 92:330577 SCISEARCH

L124 ANSWER 38 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 19
TI CONJUGATION OF 2-CHLOROACETANILIDE HERBICIDES WITH GLUTATHIONE - ROLE OF
MOLECULAR-STRUCTURES AND OF **GLUTATHIONE-S-
TRANSFERASE** ENZYMES
SO JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (1991) Vol. 39, No. 11, pp.
2010-2013.
AU SCARPONI L (Reprint); PERUCCI P; MARTINETTI L
AN 91:643145 SCISEARCH

L124 ANSWER 39 OF 43 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
STN
TI INVESTIGATION OF XENOBIOTIC METABOLISM FOR THE QUALITATIVE EVALUATION OF
PROTEIN-CONTAINING PRODUCTS PREPARED BY METHODS OF BIOTECHNOLOGY FROM
VEGETABLE RAW MATERIAL.
SO Voprosy Pitaniya, (1990) No. 3, pp. 61-64.
CODEN: VPITAR. ISSN: 0042-8833.
AU MARTINCHIK A N [Reprint author]; VYSOTSKII V G; BONDAREV G I; ZILOVA I S;
FEOKTISTOVA A I; MAMAEVA E M; PESKOVA E V
AN 1991:25999 BIOSIS

L124 ANSWER 40 OF 43 MEDLINE on STN DUPLICATE 20
TI Effect of experimental pancreatic growth on the content of
xenobiotic-metabolising enzymes in the pancreas.
SO Gut, (1987) 28 Suppl 197-201.
Journal code: 2985108R. ISSN: 0017-5749.
AU Ross J; Barrowman J A
AN 88084658 MEDLINE

L124 ANSWER 41 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
TI Effect of a protein isolate from soybeans on the biotransformation of
xenobiotics in the rat liver
SO Farmakologiya i Toksikologiya (Moscow) (1987), 50(6), 72-4
CODEN: FATOAO; ISSN: 0014-8318
AU Martinchik, A. N.; Panova, R. V.; Feoktistova, A. I.; Bondarev, G. I.
AN 1988:36617 HCAPLUS
DN 108:36617

L124 ANSWER 42 OF 43 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation.
on STN DUPLICATE 21
TI INFLUENCE OF EXTRACTS FROM SOYBEAN (**GLYCINE-MAX** (L)
MERR) LEAVES ON HYDROLYTIC AND **GLUTATHIONE-S-
TRANSFERASE** ACTIVITY IN THE SOYBEAN LOOPER (**PSEUDOPHILUSIA-INCLUDENS**
(WALKER))
SO JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (1986) Vol. 34, No. 3, pp.
444-447.
AU DOWD P F; ROSE R L; SMITH C M; SPARKS T C (Reprint)
AN 86:315882 SCISEARCH

L124 ANSWER 43 OF 43 MEDLINE on STN DUPLICATE 22
TI Interactions of dietary methionine, lead and lindane in rats.
SO Drug-nutrient interactions, (1986) 4 (4) 349-54.
Journal code: 8307198. ISSN: 0272-3530.
AU Rowe V A; Hathcock J N; Serfass R E; Shriver C N
AN 87080034 MEDLINE

=> d ab 5,8,14,16,17

L124 ANSWER 5 OF 43 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 4

AB Soybean (**Glycine max** L.) contains homoglutathione (hGSH) as the predominant free thiol, rather than glutathione (GSH). Two cDNAs encoding glutathione transferases from soybean have been isolated and subsequently over-expressed in *E. coli*. Both recombinant enzymes were active as dimers (GmGST1-1, GmGST2-2) and showed **GST** and glutathione peroxidase activity toward diverse xenobiotics, including analogues of natural stress-metabolites. GSH was the preferred thiol for conjugation by GmGST1-1 to most xenobiotics with the exception of selected diphenyl ether herbicides, where hGSH was preferred. GmGST2-2 also displayed thiol preference with respect to its xenobiotic conjugating activities. These results suggest that at least two soybean GSTs demonstrate thiol specificity as well as substrate-dependent specificity.

L124 ANSWER 8 OF 43 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
AB Glutathione-transferases (GSTs) (EC-2.5.1.18) catalyze the conjugation of glutathione to electrophilic compounds and their activity in the selectivity of many herbicides is well understood. The use of molecular biology has led to the identification of a number of plant **GST** genes with most belonging to either of 2 distinct classes, type-I or type-III. A combination of biochemical and molecular biological techniques, including foreign expression of the enzymes in plants and bacteria were performed to characterize the enzymes identified. A study of **GST** mediated herbicide metabolism using recombinant enzyme has shown that notable differences exist between the **GST** present in soybean (**Glycine max**) and those in cereals such as maize (*Zea mays*). Of particular interest was the variation in thiol specificity observed, showing that in addition to the presence of specific **GST** isoenzymes the presence of specific thiols in certain plant species may play an important role in herbicide selectivity. (0 ref)

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on STN DUPLICATE 9

AB Soybeans (**Glycine max**) have nearly undetectable levels of glutathione, substituting the tripeptide homoglutathione for the same functions. Some herbicides are detoxified in soybeans by homoglutathione conjugation catalyzed by **glutathione S-transferase (GST)** enzyme(s). We have cloned and overexpressed a new soybean **GST** (GSTa), the previously described soybean **GST** (GH2/4), and two maize GSTs. Their ability to utilize homoglutathione and glutathione in several nucleophilic substitution reactions was measured. In most cases conjugation to subsaturating concentrations of electrophilic substrate was faster with glutathione. However homoglutathione conjugation was faster with some combinations of enzyme and substrate, notably, GH2/4 and the herbicide chlorimuron ethyl. Steady-state kinetic evaluations revealed that a ternary complex is part of the reaction mechanism, and the binding of substrates takes place in random order. A random order rapid equilibrium model was used to compare the GH2/4-catalyzed reaction of both thiols with chlorimuron ethyl and alachlor. This revealed that catalytic rate constants do not differ significantly between the thiols. Conjugation rates with homoglutathione exceed those with glutathione when a high dissociation constant for second substrate makes formation of a glutathione containing ternary complex unfavorable, in GH2/4 this occurs with chlorimuron ethyl but not with alachlor. (C) 1998 Academic Press.

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AB Three-week-old soybean plants were sprayed with formulated herbicide safeners used in cereals and the diphenylether herbicides, fomesafen and oxyfluorfen, at a range of concns. Glutathione transferase (**GST**) activities toward 1-chloro-2,4-dinitrobenzene (CDNB) and fomesafen were then determined in crude leaf exts. Both oxyfluorfen and fomesafen enhanced **GST** activity toward CDNB, with visible herbicide injury occurring at the rates used. The herbicide safeners dichlormid, naphthalic

anhydride and BAS 145-138 gave a more modest enhancement of **GST** activity toward CDNB, but this was not associated with phytotoxicity. In contrast to the CDNB-conjugating activity, the **GST** activity toward fomesafen was unresponsive to all treatments.

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AB Soybean is known to contain multiple **glutathione S-transferases** (GSTs), but their role in herbicide detoxification and endogenous metabolism has not been well defined. Here, the authors purified several **GST** isoenzymes from 5-day-old soybean seedlings, and determined their activity toward chemical diverse xenobiotic substrates including the soybean selective herbicides, metolachlor and chlorimuron-Et. The **GST** isoenzymes were purified by a combination of hydrophobic interaction chromatog., affinity chromatog. using S-hexylglutathione, and anion-exchange chromatog. Using the different herbicide substrates it was possible to resolve the **GST** activities into at least 3 isoenzymes composed of polypeptides with mol. wts. in the range of 25-29 kDa.

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

504.90

505.11

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

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